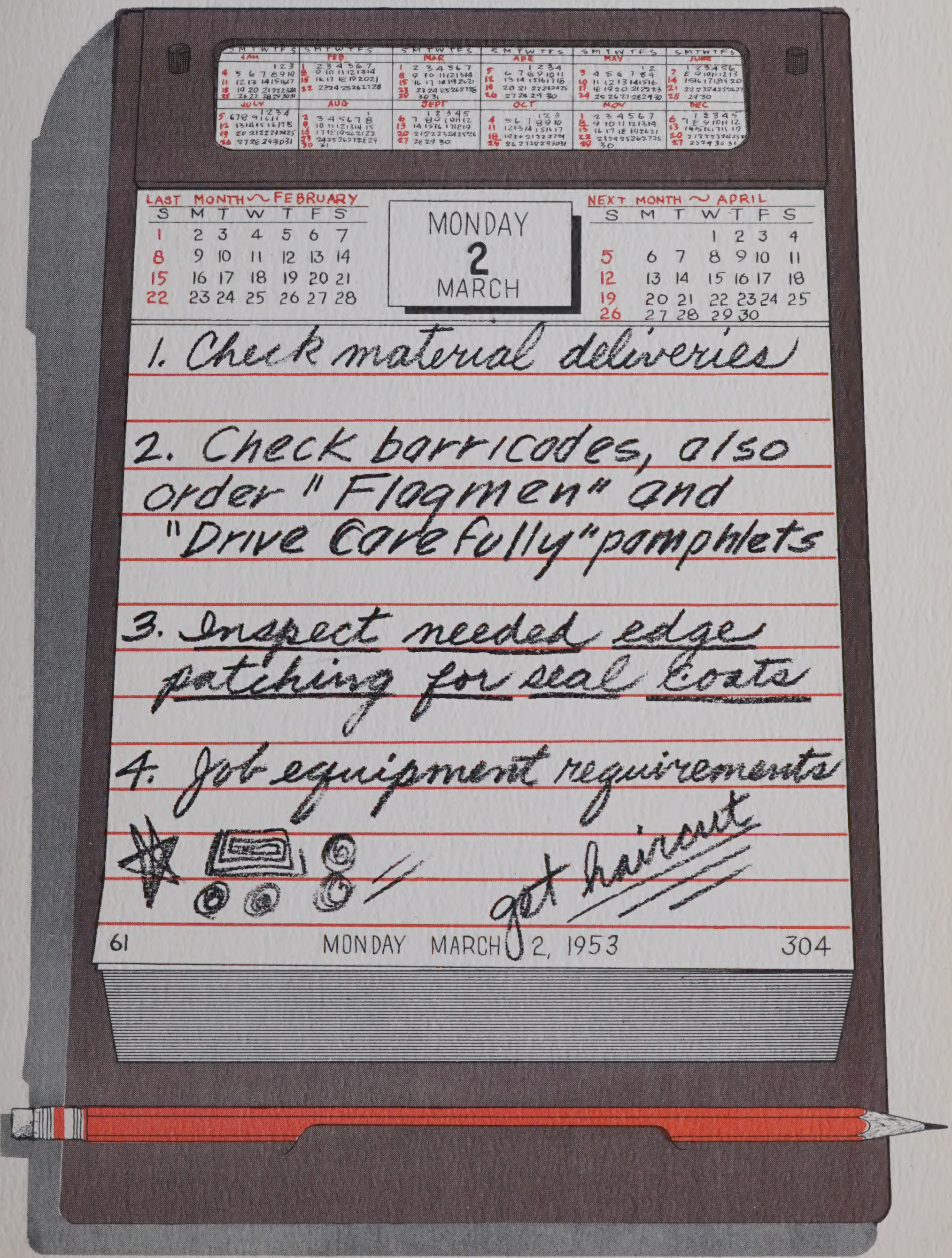
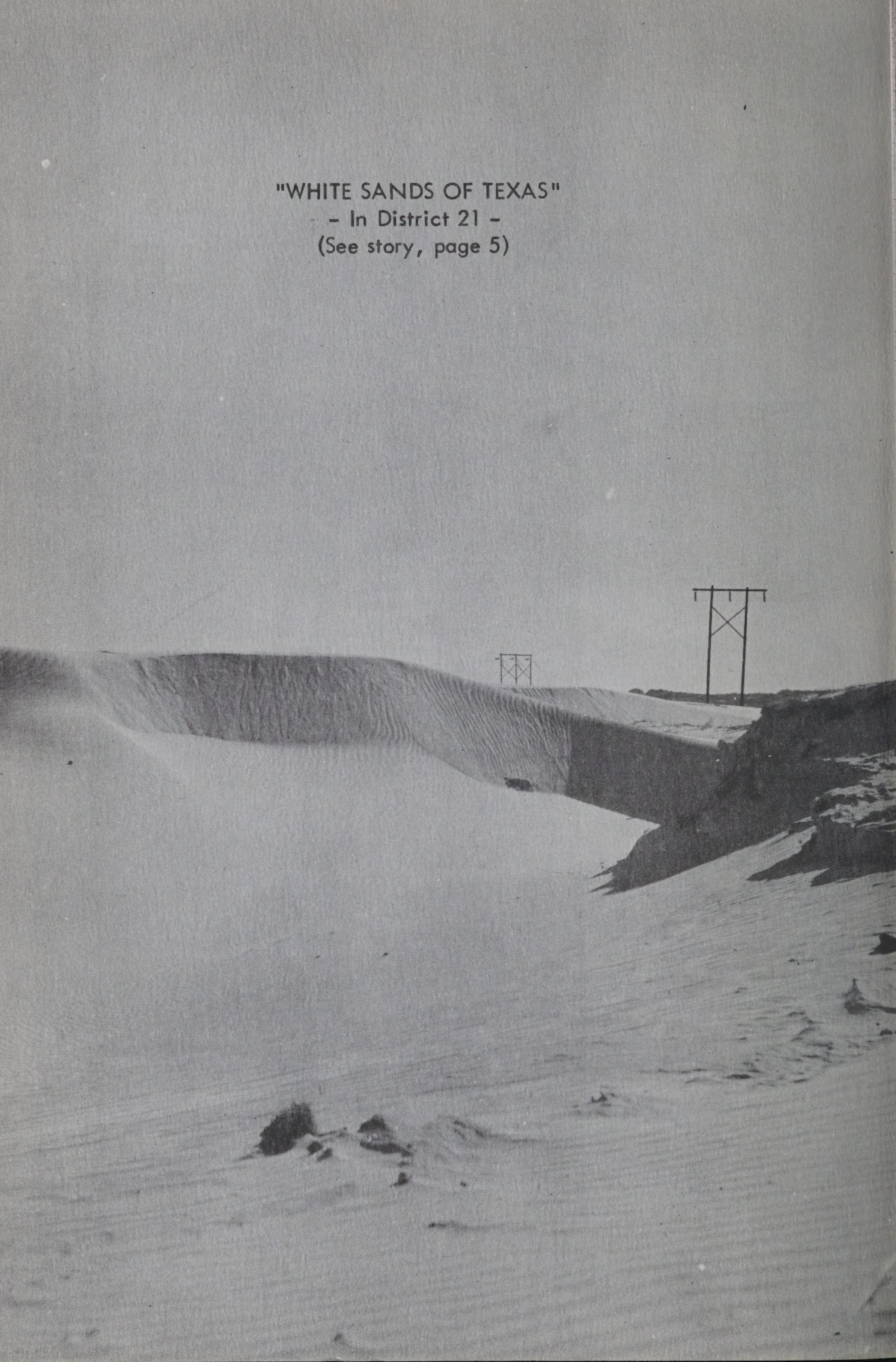
TEXAS HIGHWAY DEPARTMENT

Construction & Maintenance

BULLETIN No. 21

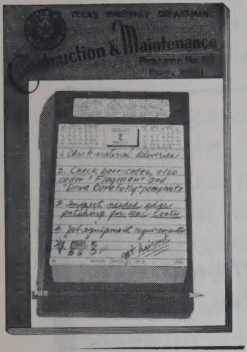
Mar, 1953


LAST MONTH ~ FEBRUARY
MONDAY
2
MARCH
NEXT MONTH ~ APRIL
1. Check material deliveries
2. Check barricades, also order "Flagmen" and "Drive Carefully" pamphlets
3. Inspect needed edge patching for seal coats
4. Job equipment requirements
get haircut
61
MONDAY MARCH 2, 1953
304



"WHITE SANDS OF TEXAS"
- In District 21 -
(See story, page 5)

About the Cover . . .



With the coming of spring, the Texas Highway Department will begin one of the largest betterment programs in history. Some 3,200 miles are to be resurfaced at a cost of about $20 million.

Last year there were seven men killed and 337 injured while working on the highways. Let's all take a pledge to try and reduce this figure for 1953. Make sure all barricades and safety signs provided for your personal safety are properly placed on the job. The real key, however, to the safety of highway workers is held in the hands of the flagman. Not only is he responsible for the safety of others but his is the key public relations spot and he can greatly influence public opinion through the performance of his job.

In the past, there have been many instances noticed in which the flagman was not only jeopardizing his own safety but that of his fellow workers as well by not positioning himself the proper distance from the job. When a flagman leans against the barricade and talks to the workers on the job, he endangers the lives of everyone concerned and aggravates motorists who are compelled to "burn rubber" to slow down for the construction.

With the tremendous amount of work before us, let's all make safety our personal responsibility.

TABLE OF CONTENTS

USING HOT MIX TO REPLACE BROKEN CONCRETE PAVEMENT 3
Howard W. Bartley
DUNE CONTROL IN KENEDY COUNTY 5
John B. Coston and S. R. Busby
MAINTENANCE OF H BEAM PILING 10
G. M. Donohoe
EAST AVENUE BRIDGE 11
Farland C. Bundy
SIMPLIFIED HANDLING OF HIGHWAY COMMISSION MINUTES 12
THE PERSONNEL PROBLEM 14
Herbert C. Eldridge
STOCKPILES AT INTERSECTIONS 17
Maintenance and Traffic Services Divisions
SLICK WHEN WET! 19
Joe Bruton
HIGHWAY COMMISSION 20
EMULSIFIED ASPHALT 22
B. C. Sides
BARRICADES ON CASTERS 25
Jack Sides
ROADSIDE TURNOUT 26
J. M. York
CENTER STRIPE OPERATIONS IN DISTRICT 5 29
J. D. Willson
A STORY OF TEXAS ROADS 32
Tom H. Taylor
CONSTRUCTION INSPECTION SCHOOL 36
Richard C. Crandall
OVER THE HIGHWAYS 38
Comments from the Traveling Public

Construction and Maintenance Bulletin

The purpose of the *Construction & Maintenance Bulletin* is to furnish a medium for presenting practical information applicable to current highway problems. These conclusions and data are not necessarily endorsed by the Highway Department nor are they to be construed as instructions. Employees are invited and urged to submit suggestions and relate experiences which would benefit those engaged in the construction and maintenance of highways.

Photographic services are available and other assistance may be obtained, if desired, in preparing material for submission. All material and comments should be directed to the Chief Engineer, Construction and Maintenance, Austin 14, Texas.

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Construction Division ..... D- 6
Traffic Services Division D-16

COMPILED AND EDITED

Traffic Services Division, INFORMATION SECTION

REPRODUCED

Operations Division, REPRODUCTION SECTION

As We See It

The employee who knows the facts about the Department, or knows where to get them, will be a more cooperative, more energetic, and more productive employee.

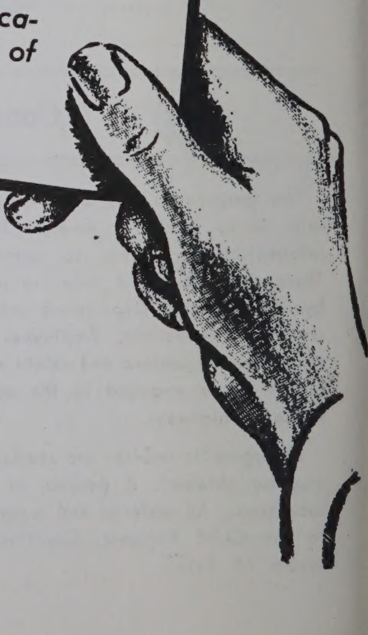
The skipper of an American battleship steaming into battle ordered a news commentator to the bridge with these instructions: "Take your station where you can see what is going on, and as long as we're engaged, tell the boys over the public address system 'how goes the battle'."

The United States Navy followed that practice in many of its engagements in World War II. The effect on morale was astounding.

The workers at the Oak Ridge, Tennessee, atomic bomb plant were carefully screened and above average. They were informed that their "Manhattan Project" had the highest of priorities. But for security reasons they did not know what they were doing.

It has been reported that within one week after the bombing of Hiroshima, which dramatized to these workers what they were producing, production doubled. When the second bomb fell on Nagasaki and further drove home to the workers the extent to which their efforts were hastening the end of the war, production quickly rose to 300 per cent of the original level.

This illustrates the importance of proper communication to keep workers informed on the significance of what they are doing.



Using Hot Mix to Replace Broken Concrete Pavement

Howard W. Bartley, Senior Resident Engineer
District 25

One of the worrisome features facing the Highway Department in the problem of revamping many miles of narrow broken concrete roads is the selection of the best material with which to patch the broken concrete to be removed. We will make no attempt to set a limit on what should be patched. In fact we are not ready to whisper "eureka" about the use of hot mix for replacing the broken concrete to be removed. We will merely state our reason for using it, giving an account of some of our findings and our conclusions.

The project was U. S. 287 between Quanah and Chillicothe, with a traffic count of 2, 600 vehicles per day. The proposed work consisted of widening the existing eighteen-foot concrete pavement with flexible base, placing a 24-foot hot mix level-up course and surface course, and constructing eight-foot shoulders of flexible base, five feet of which would have a double asphalt surface treatment. We wanted to carry traffic through the project on the eighteen-foot concrete, so far as possible, rather than try to provide a surfaced detour. Though the choice of concrete for patching purposes would have allowed us to at least have the bulk of the patching done prior to surfacing operations, we decided against its use because of the night hazard of detouring the patches. In selecting hot mix we were required to locate a stretch of the existing concrete needing no patching that was long enough to allow the contractor to start his surfacing. Also, we knew we must move the patching down the road at a rate that would let the contractor keep moving. Thus we could put a note on the plans that the contractor would not be required to furnish patching material except when carrying on the surfacing operations. We had decided that, regardless of material used, the patching would be done by state maintenance forces because they were familiar with the likely sources of trouble. We estimated 1, 700 square yards of concrete to be removed and replaced and thought we could handle about 80 to 100 square yards per day with one complete crew. Since it appeared that we could handle the problem and let traffic have the use of the existing pavement at night, we chose this method and placed the items, Furnishing Asphalt and Furnishing Aggregate in the list of bid items, with the maintenance trucks to pick up the mix as needed. For breaking out the concrete to be removed, the district shop prepared a drop hammer to work on the front of a converted front end loader. This breaker could easily handle all the breaking out that we could replace per day and could have handled the breaking out for an additional patching crew, if necessary.

The patching crew expected to compact the hot mix with pneumatic tamps. We first learned that the tamps do little good while the mix is hot enough for surfacing because of shoving, though they work well enough after the mix has cooled. We also learned that the first lift of the patch should be relatively thin to allow quick cooling. When circumstances demand, the upper layers of the patch can be placed fairly thick but if the heat is sealed in the lower layers the patch will remain unstable for quite awhile, forcing the patching crew to keep it barricaded into the night. Another trouble encountered when trying to compact a thick, hot bottom layer was the subgrade moisture steaming, which caused puffing and forced us to excavate an extra six inches of subgrade.

The method of procedure which our crew finally settled on was to scatter about three inches of loose hot mix for the bottom layer, allow to cool until it could be tamped or rolled, and then roll as much of the layer as could be reached with a ten-ton tandem while tamping the edges and niches that the roller could not cover. While this layer was cooling off, the same procedure was followed at the next holes, coming back to the first after placing one layer for all the patches proposed for that day. About 50 square yards was a pretty full day for one crew. Excavation could not be started until daylight, thus the first patch layer was usually placed about 10 A. M. Waiting between lifts, and trying not to place a final lift after 4 P. M. combined to limit the amount which could be patched each day. In general, the top lift was considered unstable enough to be dangerous to traffic if our truck wheels marked as deep as one-fourth inch. This repair work was done in the winter which limited daylight hours but accelerated the rate of cooling, so it is doubtful that summer patching would move much faster. For the benefit of anyone intending to follow the above procedure, we suggest one normal size pneumatic tamping head and the enlargement of a second head to ten inches square. The larger head will begin to tamp a hotter mix than the regular because it does not allow as much shoving. Our patches were twelve inches deep. If deeper patches are proposed, more than a proportional length of cooling time should be allowed.

Our conclusions are that a proposed job identical to ours, in ratio of tons of surfacing to be placed divided by square yards of patching proposed, would require two crews for a large hot mix plant. Our ratio was about twenty. Allowing even 50 square yards of patching per day, which was about as much as we could do with one crew, the plant would be limited to less than 1, 000 tons per day or force the contractor to do some skipping. (This, of course, assumes intermittent patches throughout the job.) If the above ratio dropped as low as ten, it would appear advisable to use a patch that could be made prior to surfacing.

We have noticed on this project that those patches which did not have as much as two days of traffic prior to surfacing have shown a settlement. Approximately 4 per cent have settled to the extent that they have been leveled with cold mix and about 2 per cent more are down about one-fourth inch. Settlement is believed to be partly in the subgrade and partly in the patch.

The big advantage in hot mix patching, where usable, is the safety feature, which cannot be measured in dollars. We are happy to be able to report that there were no accidents at night due to patching.

Roger Q. Spencer, author of the article on "School on Signs, Signals, and Markings" in the February Bulletin, was erroneously shown as Senior Maintenance Foreman. Spencer's correct title is Senior Maintenance Engineer.

DUNE CONTROL
IN KENEDY COUNTY

John B. Coston, Landscape Inspector
with S.R. Busby, Assistant District Engineer
District 21

The northern part of Kenedy County is composed principally of beach sand, most of which has been stabilized by nature with various grasses, weeds, and live oak trees. However, there are many areas of active dunes.

These dunes are rolling across pasture land that runs from sea level up to approximately 30 feet. Height of the individual dunes will average between ten and twenty feet by about 200 feet across (in the windward direction). The lateral dimensions are variable, 300 to 600 feet, and are constantly changing as one dune overruns the next. U.S. 77 runs through 30 miles of this and is seriously threatened in three places.

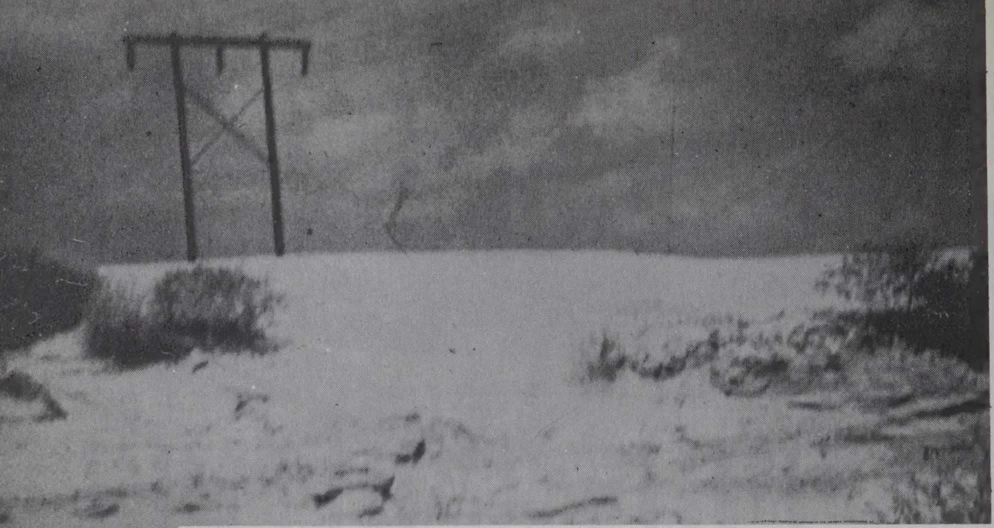
In 1938 when U.S. 77 (then designated as Highway 96) was extended through Kenedy County, an easement 1,200 feet long by 500 feet deep was secured for dune protection in one of the most active areas. Only minor control measures were taken until 1949, when it became apparent the highway would be overrun if the dunes were not stopped.

Studies showed that in sheltered places the dunes would support native grasses and weeds. The job then was to arrest movement of the dunes long enough for these plants to take over.

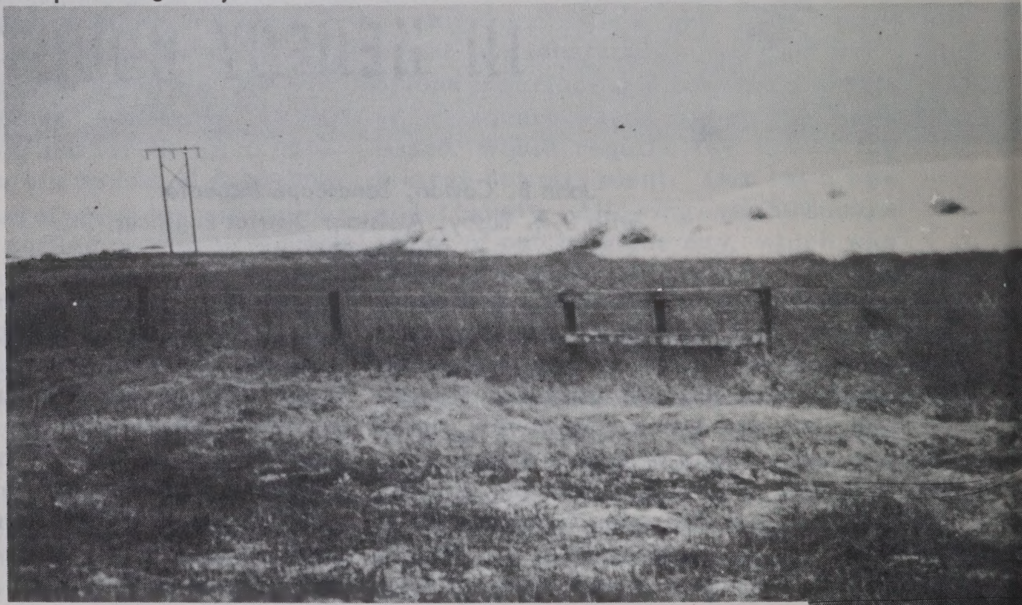
Simple seeding was impossible because day by day new surfaces were exposed. The strong southeast winds were removing sheets of sand constantly. Various decomposed seed were observed as the wind uncovered their twenty-year grave and then rolled them up the slope and over the crest to be buried again under ten to twenty feet of sand.

It was decided to use a control method that had been sucessfully employed on adjacent ranches, but the necessary Georgia Cane (Arundo donax) was not available until October because of a severe freeze that leveled most of the vegetation throughout the district. During this period of waiting (approximately six months), the dunes moved an estimated 50 feet nearer the highway.

Before details of planting are given, it should be explained that the dunes in this section are rolling across ground that is very near sea level (25 to 30 feet) and they contain considerable capillary moisture in the compact sand of the inactive part of the dune. The water is salty only in the

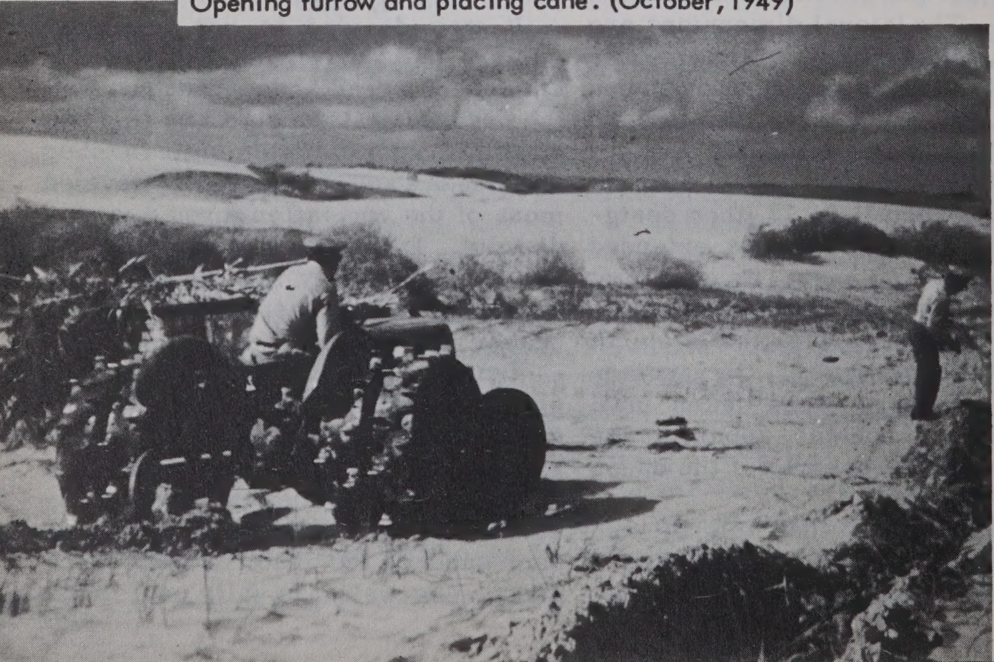


Power poles originally offset to avoid the dunes are now surrounded.



View of dunes from highway prior to control measure. (September, 1949)

Opening furrow and placing cane. (October, 1949)



lowest troughs.

Furrows approximately eight inches deep were made across wind fifteen feet to twenty-five feet apart from the trough to the crest. Two rows of full length mature Georgia cane were laid end to end in the bottom of the furrows. The furrows were then refilled by dragging guard mesh wire over them.

Usually the dunes are fairly stable during the winter on account of alternate north and south winds and frequent light winter rains. However, extremely high winds, predominantly from the southeast, continued most of the winter with practically no rain. Results were that most of the cane on the lower three-fourths of the windward slope was uncovered, and near the crest was covered too deep with dry sand. The cane that was protected sufficiently to survive the first year is doing well and is gradually spreading. Had there been favorable conditions of moisture and temperature and a full season in which to grow, the cane would have produced a new plant at each joint.

The neighboring ranches used this method successfully before the extremely dry windy period came. The ranchers were more fortunate in that they were able to choose the time and the weather, as both men and material were on hand at all times. Dune control was the wet weather job of the ranch employees.

In 1951, it became apparent that the stand of cane was not sufficient to completely stop the movement. Complete stoppage is necessary, for even a deep footprint exposed to the strong winds might be all that is required to bring the dune to life again.

Permission was secured to thin nearby oak mots and use the brush for cover. The brush was dragged to the dunes by tractors with tow cables and spread over the entire area. Trucks could not be used in the dunes proper, and in many cases considerable difficulty was encountered with the tractors.

Bermuda grass seed was broadcast along with the brush cover, but most of the seed went with the wind. However, native grasses and weeds are beginning to take over and apparently will bring the dunes under control.

Had the extremely dry condition been foreseen, a combination of both the cane planting and brush covering operations would probably have brought the dunes under control a year earlier and at less expense.

Recently new dunes have become active in a different area. There was not sufficient brush in the vicinity to cover these new dunes and the dry weather still prevails, so neither of the previous operations could be successfully applied.

Baled hay of matured grasses and weeds from adjacent counties was spread over the erosive slopes in strips across wind. Each strip of hay was partially covered with sand taken adjacent to the hay on the windward side, as shown in Figure 3. Then another strip was laid adjacent to the first and covered in the same manner until the entire dune was covered.

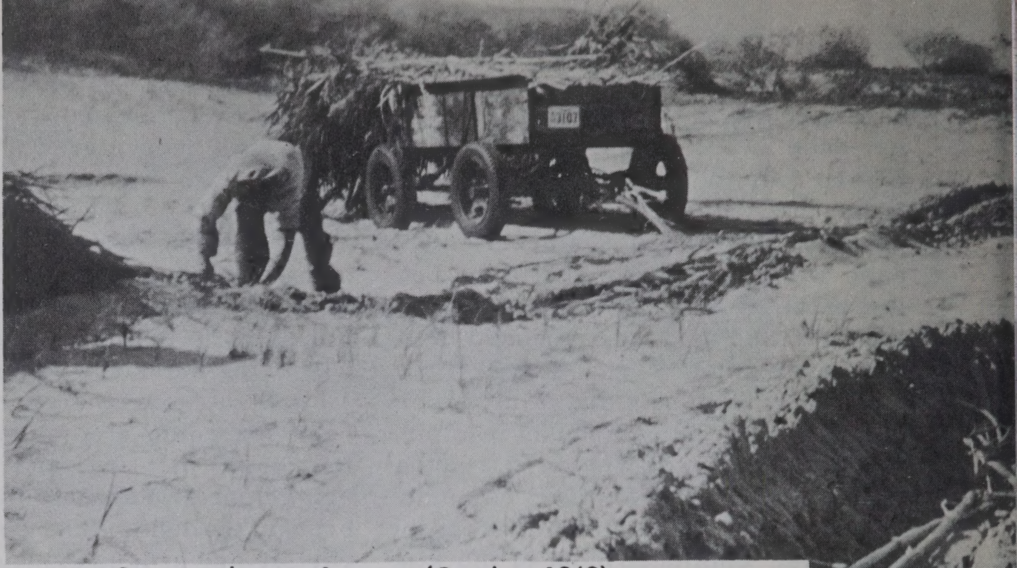
The hay has held the blowing sand for several months, and some growth is apparent. With a few light rains in the spring, the experiment should be successful.

In a small way, experiments have been conducted with cutback asphalt sprayed over a previously seeded area. This method shows promise, but would probably be more expensive due to operational difficulties.

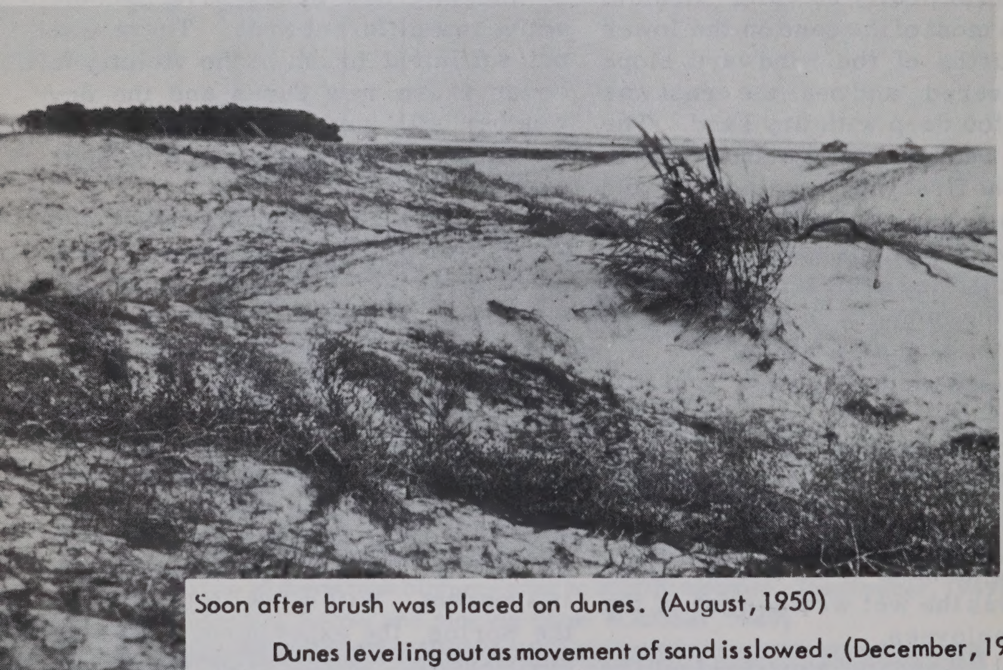
Estimated expenses of the various operations are shown in the table below.

Each of these operations include either the building or repair of fences.

Hauling and planting cane.	$250 per acre
Covering dunes with brush	$350 per acre
Covering dunes with hay.	$280 per acre

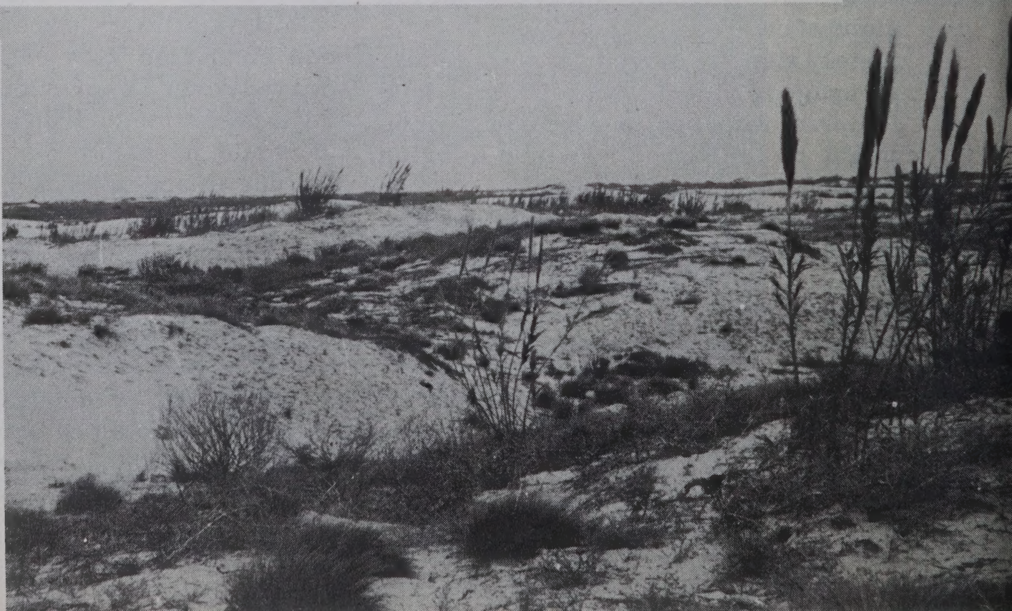


Cane in place in furrow. (October, 1949)



Soon after brush was placed on dunes. (August, 1950)

Dunes leveling out as movement of sand is slowed. (December, 1952)



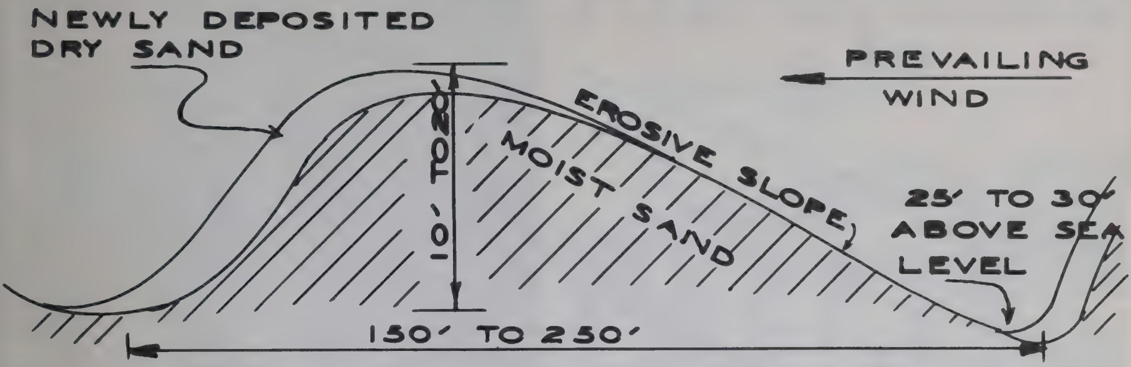
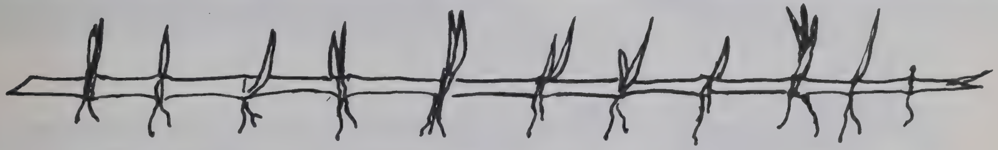
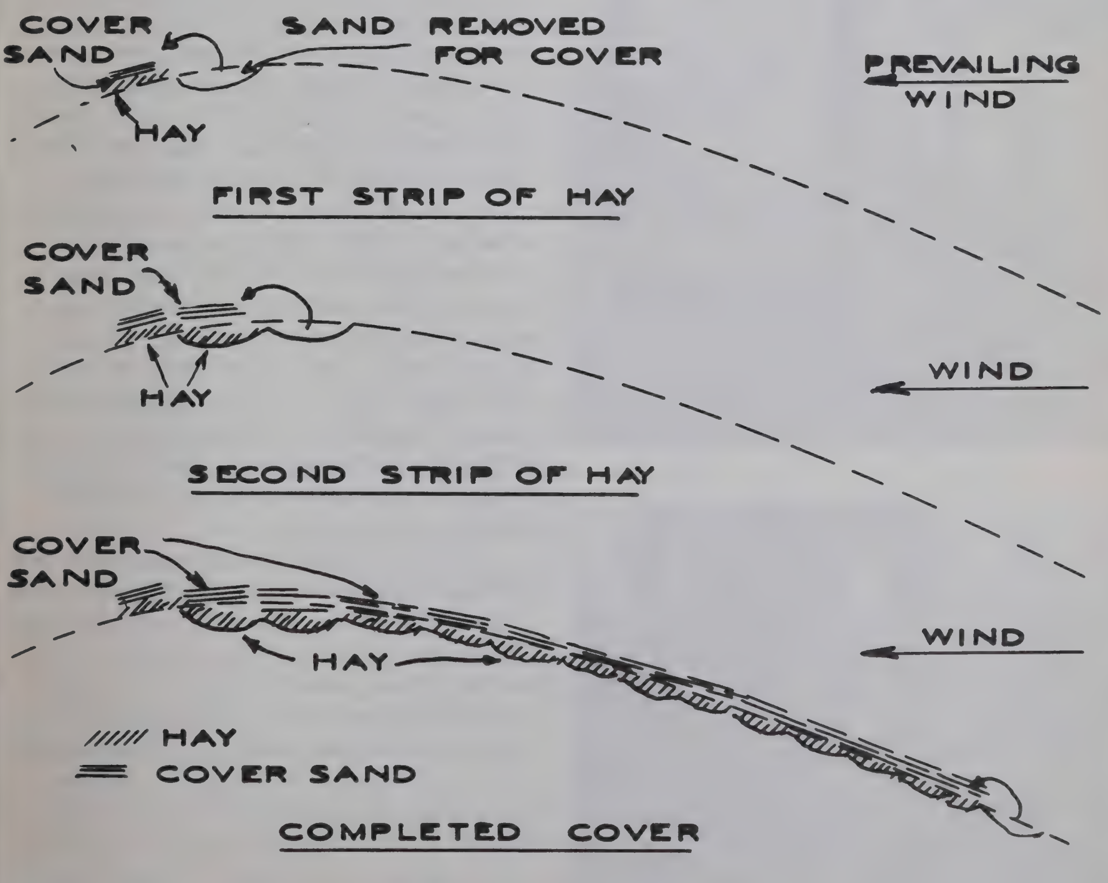


FIG. 1 TYPICAL DUNE



CANE SPROUTS AT EACH NODE

FIG. 2



FIRST STRIP OF HAY

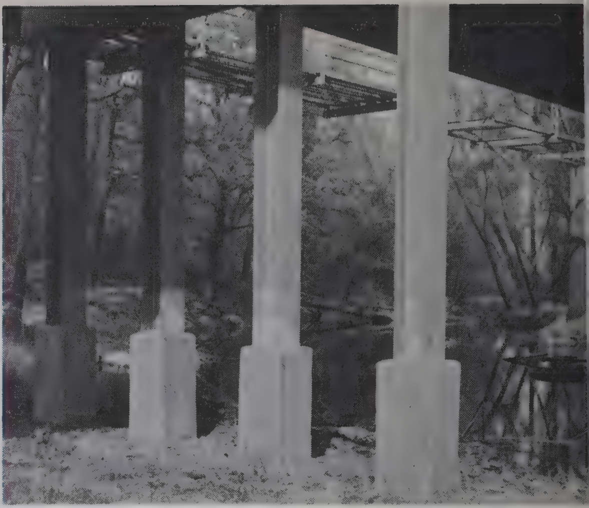
SECOND STRIP OF HAY

COMPLETED COVER

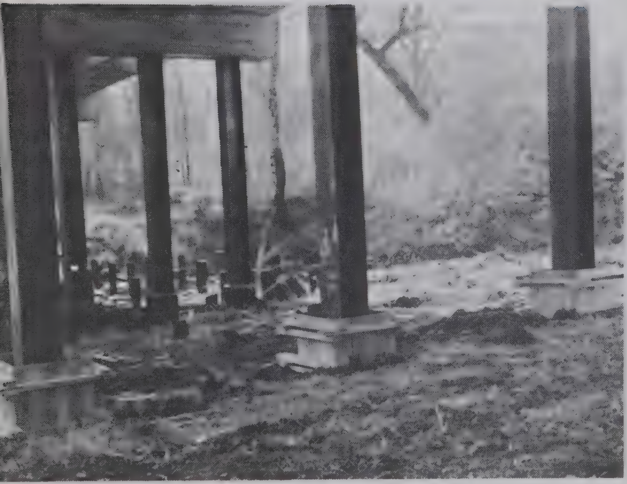
FIG. 3

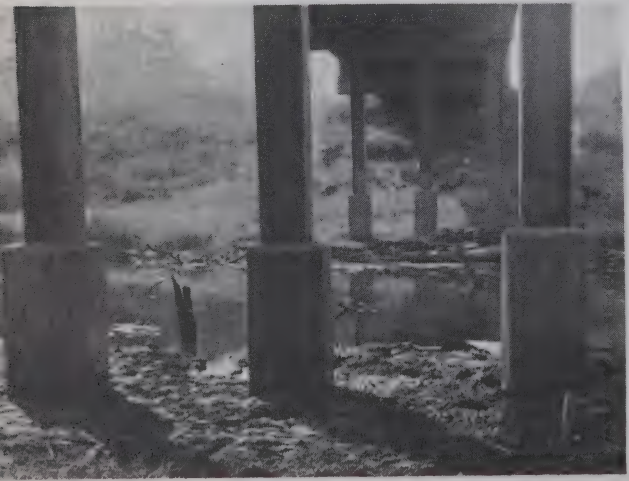
Maintenance of

Piling



G. M. Donohoe, Senior Maintenance Foreman
District 10

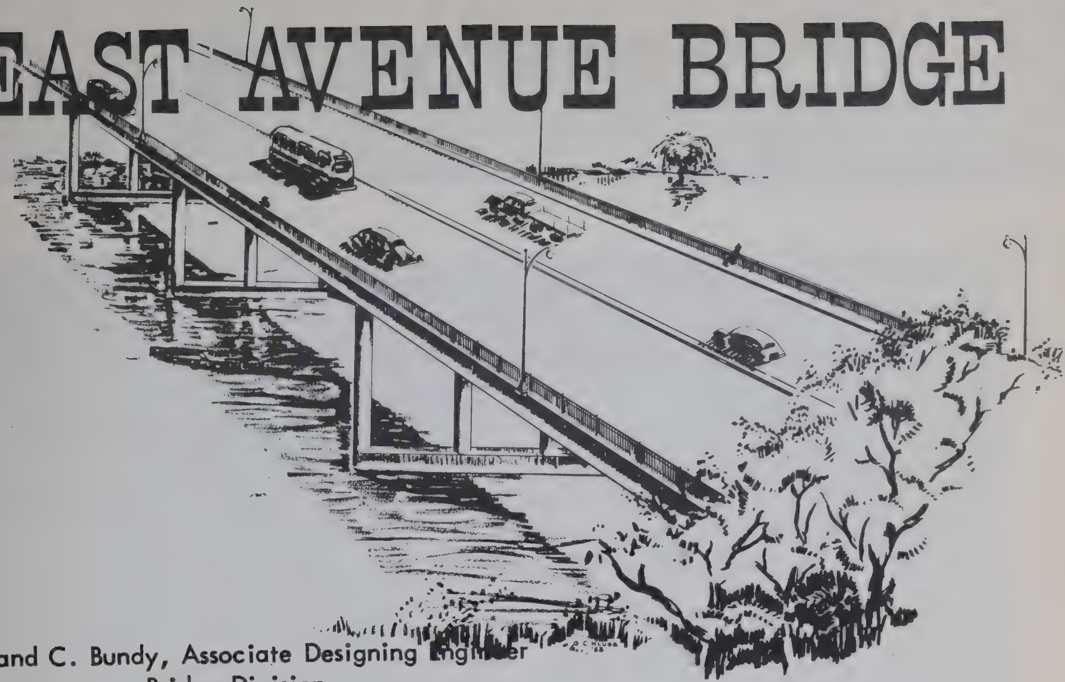




In Wood County we have had several bridges using steel H-beam piling constructed in the past few years. It has been our practice to paint these piling periodically. However, even with periodic painting, many of these piling showed extensive corrosion at the ground or water line. Early this fall the water level in most of our streams was lower than it had been in many years. On some of our streams, particularly the Sabine River on F. M. 14, a careful inspection when the water level was at its lowest showed that some of the piling were badly corroded below the extreme low water level as well as just above and below the normal low water level.

To protect these piling against further deterioration, we decided to cast concrete collars around them, taking advantage of the unusually low water levels. This greatly simplified the job. The collars were two feet square, and were poured from about two feet below the ground line to from two to four feet above the ground line, which is the normal low water line when the piling were in the channels. Piling were wrapped spirally with wire before pouring, and were peaked slightly on top to drain them.

EAST AVENUE BRIDGE



Farland C. Bundy, Associate Designing Engineer
Bridge Division

Austin's widest and most modern bridge will soon be constructed over the Colorado River to serve as a vital link in the Austin Expressway System. In order to serve as a crossing for the access roads as well as for the expressway proper, the bridge was designed for six lanes of traffic. Three south-bound lanes are separated from three north-bound lanes by a four-foot median strip which extends not only across the bridge but is continuous for the entire length of the expressway. A four-foot sidewalk is also provided on each side of the structure, bringing the over-all width of the concrete deck to 90 feet. The sidewalk railing will be a metal picket type similar to the railing on the remainder of the expressway structures.

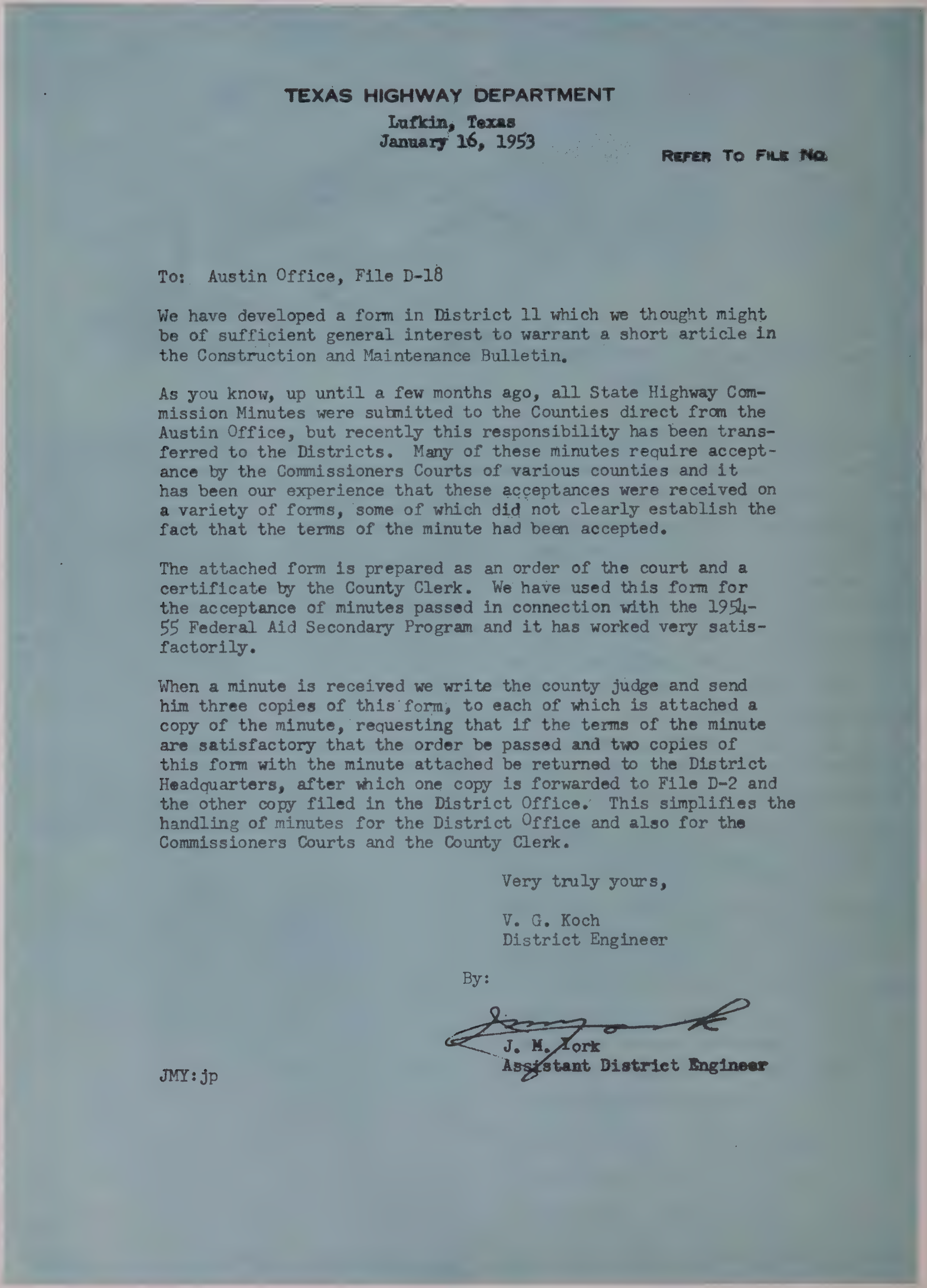
The prime load carrying elements of this bridge are a system of welded steel girders, the largest of this type ever to be designed and constructed under the supervision of the Texas Highway Department. The use of welding in fabricating the steel members results in considerable economy both as to cost and as to saving in structural steel when compared with a more conventional riveted design.

These steel girders are supported by bents or piers made up of a cap and four large round columns extending into the hard rock which underlies the stream bed. The nine spans making up the 1, 050 feet of bridge provide adequate waterway opening underneath the bridge to pass any anticipated flood, with due consideration being given to the system of dams on the upper reaches of the river.

This East Avenue Bridge, as an integral part of the expressway system, should greatly diminish the overburden of traffic on the existing river bridges and on the city streets leading up to those bridges. Also, in time of national emergency, this bridge would serve to allow free movement of troops and military equipment in this area.

This bridge will appear lighter than the Congress Avenue and Lamar Street crossings and should achieve a pleasing countenance with primary emphasis on horizontal and vertical lines. Its contribution to the beauty of the City of Austin will be largely determined by the average citizen who views the structure daily and uses it often to get quickly and safely to his destination.

SIMPLIFIED HANDLING OF



TEXAS HIGHWAY DEPARTMENT
Lufkin, Texas
January 16, 1953

REFER TO FILE NO.

To: Austin Office, File D-18

We have developed a form in District 11 which we thought might be of sufficient general interest to warrant a short article in the Construction and Maintenance Bulletin.

As you know, up until a few months ago, all State Highway Commission Minutes were submitted to the Counties direct from the Austin Office, but recently this responsibility has been transferred to the Districts. Many of these minutes require acceptance by the Commissioners Courts of various counties and it has been our experience that these acceptances were received on a variety of forms, some of which did not clearly establish the fact that the terms of the minute had been accepted.

The attached form is prepared as an order of the court and a certificate by the County Clerk. We have used this form for the acceptance of minutes passed in connection with the 1954-55 Federal Aid Secondary Program and it has worked very satisfactorily.

When a minute is received we write the county judge and send him three copies of this form, to each of which is attached a copy of the minute, requesting that if the terms of the minute are satisfactory that the order be passed and two copies of this form with the minute attached be returned to the District Headquarters, after which one copy is forwarded to File D-2 and the other copy filed in the District Office. This simplifies the handling of minutes for the District Office and also for the Commissioners Courts and the County Clerk.

Very truly yours,

V. G. Koch
District Engineer

By:

J. M. York
Assistant District Engineer

JMY:jp

ORDER OF COMMISSIONERS COURT OF ______________ COUNTY

The Commissioners Court of ______________________ County, met in Regular Special Session on this the _____ day of _______ 195__ and passed the following order:

Upon a motion by Commissioner ____________________, and seconded by Commissioner __________________, the Commissioners Court of ______________ County, hereby accepts the terms and conditions of State Highway Commission Minute No. __________ dated ____________, a copy of which is attached hereto, and made a part hereof.

The vote was as follows:

- - - - - - - - -

CERTIFICATE

THE STATE OF TEXAS

COUNTY OF ____________

I, County Clerk in and for the County Court of ___________ County, Texas, do hereby certify that the above and foregoing is a true and correct copy of the Order of the Court of Commissioners, dated this the _____ day of ___________ 195__, as the same was recorded on the Docket of the Commissioners Court of ___________ County, Texas in Volume _________ Page ________.

GIVEN UNDER MY HAND AND SEAL OF OFFICE this _____ day of 195__,

__________________ County Clerk

__________________ County, Texas

The Personnel Problem

Herbert C. Eldridge, Chief Engineer of Planning

The personnel problem continues to be as acute as it was in the days immediately following World War II. This is due to several reasons, including the forced military service of all young men. It should not be expected that the supply of young engineers or of young employees other than engineers will meet the demand at any time in the near future. The passing of time and the Department's retirement policy are taking a toll of the older employees, who have contributed so much to the success of the Department. Our inability to obtain young employees and our continued loss of older employees bring about a condition that is of grave concern to all who have the best interest of the Department foremost in their minds and hearts. The problem constitutes a challenge to the present and future efficiency and serviceability of the organization. It must be met boldly if the service and tradition of the Department are to be maintained.

Any successful organization must have sound personnel policies practically administered. It must have a realistic salary scale. It must be imbued with honesty, integrity, and a desire for efficient, courteous service.

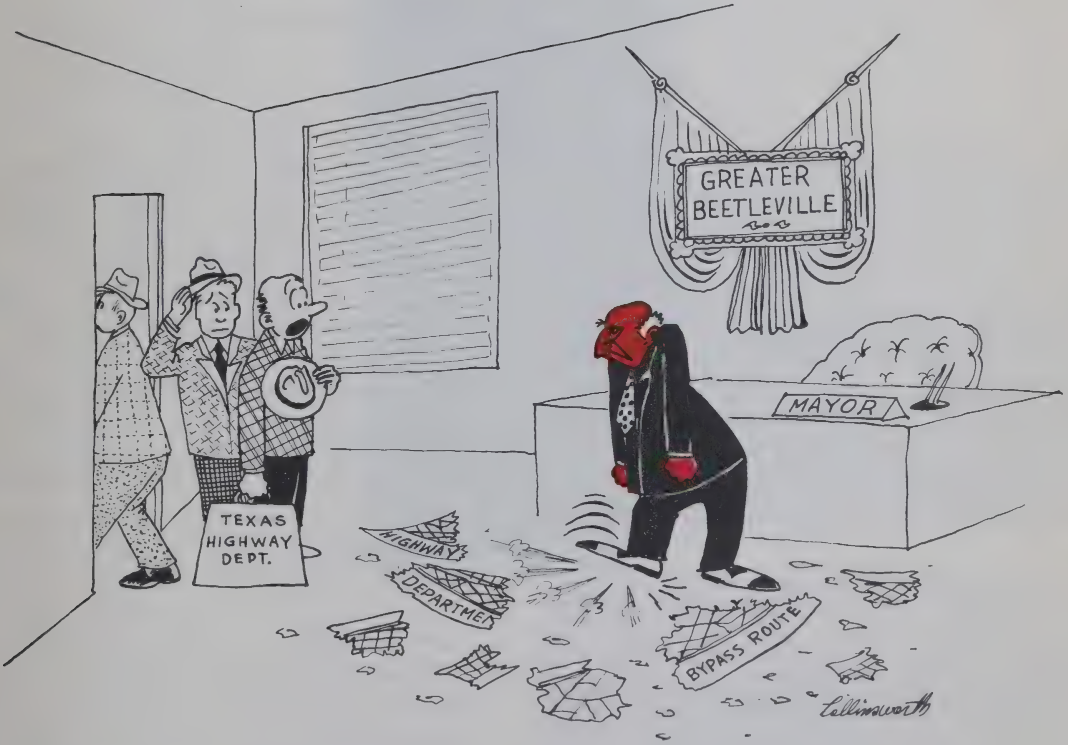
The Department has sound personnel policies. The policies are under the control of the Department and, in general, are subject to modification within the Department. It follows that we should not blame policies for our personnel failures. If we have weakness, it is within our means to effect corrective measures. Also, administration of policies is our responsibility. As administrative officials, personnel is our first and most important responsibility. As a person is judged by the company he keeps, an administrator is judged by his personnel. An able administrator is ever alert to the importance of carefulness in selection, adequate training, proper tools and equipment, personal convenience, and courteousness. He maintains a personal interest in each employee and especially trains those in the organization who have the responsibility of supervising other employees.

The salary scale is the responsibility of the State Legislature. We are permitted to submit our case and are given the opportunity of a hearing before the Senate and House Committees. Our presentation is handled by the members of the Highway Commission, who are fully cognizant of the importance of the salary scale to the maintenance and perpetuation of an efficient organization to carry out the responsibilities incumbent upon the Commission. We are assured that our cause is ably and conscientiously handled with the Legislators. The actions of the Legislature are conscientious and reflect their best judgment in the solution of the over-all problems confronting them. It has not been Legislative policy to make salaries of state employees competitive with those of private industry. There is no indication that this policy will be changed. Under this policy our organization has operated from its beginning. We know that we must continue under this policy to produce the very best highway service for our people.

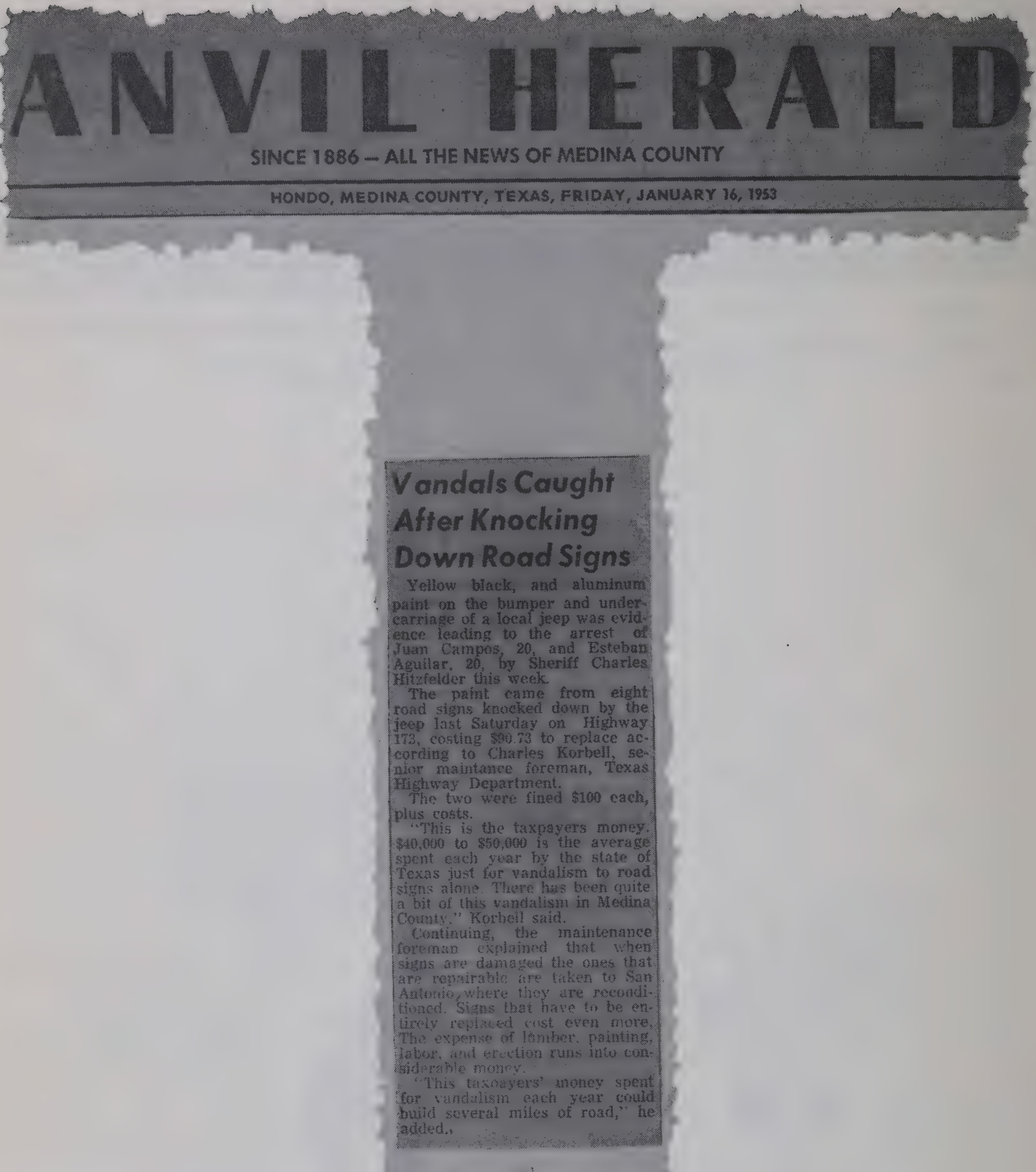
Thus the personnel problem remains our responsibility under existing conditions. It will not be solved by blaming the Legislature, the Highway Commission, the State Highway Engineer, the Personnel Director, or the Austin Office in general. It will be solved only by our own diligence as administrators in giving proper attention to our own personnel requirements. When we have our own personnel house in order, we will find that our problems of public relations as well as engineering are being ably met.

Think it over.

* * *



"Then shall we assume, Mr. Mayor, that you aren't in favor of our new superhighway bypassing Beetleville?"



ANVIL HERALD
SINCE 1886 — ALL THE NEWS OF MEDINA COUNTY
HONDO, MEDINA COUNTY, TEXAS, FRIDAY, JANUARY 16, 1953

Vandals Caught After Knocking Down Road Signs

Yellow black, and aluminum paint on the bumper and undercarriage of a local jeep was evidence leading to the arrest of Juan Campos, 20, and Esteban Aguilar, 20, by Sheriff Charles Hitzfelder this week.

The paint came from eight road signs knocked down by the jeep last Saturday on Highway 173, costing $90.73 to replace according to Charles Korbell, senior maintance foreman, Texas Highway Department.

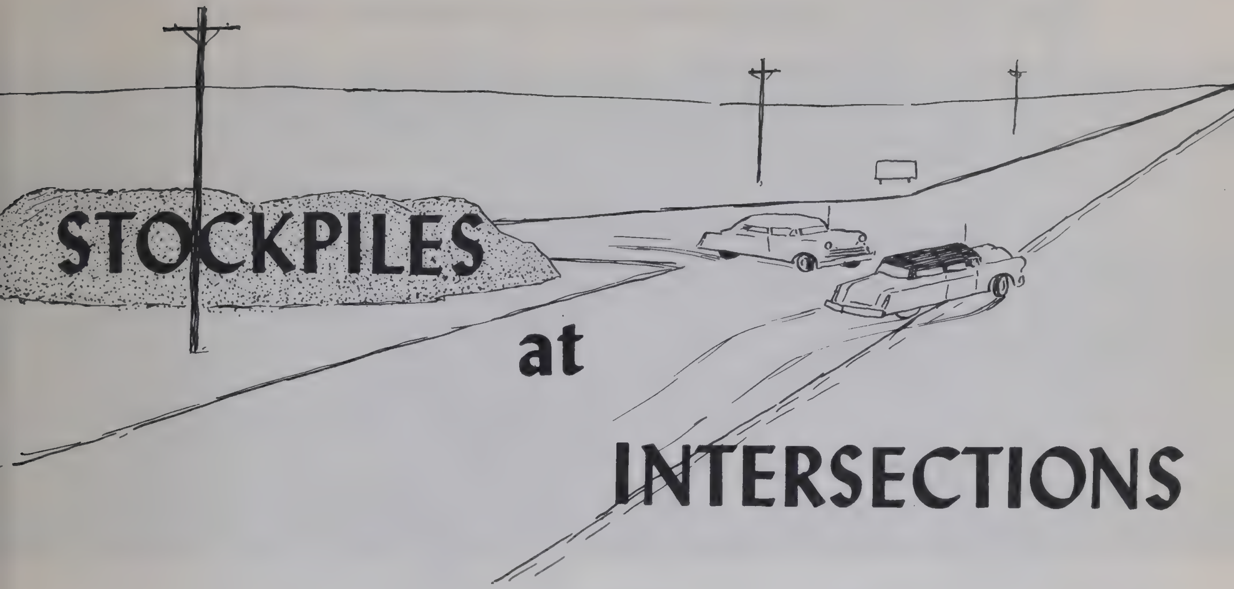
The two were fined $100 each, plus costs.

"This is the taxpayers money. $40,000 to $50,000 is the average spent each year by the state of Texas just for vandalism to road signs alone. There has been quite a bit of this vandalism in Medina County," Korbell said.

Continuing, the maintenance foreman explained that when signs are damaged the ones that are repairable are taken to San Antonio, where they are reconditioned. Signs that have to be entirely replaced cost even more. The expense of lumber, painting, labor, and erection runs into considerable money.

"This taxpayers' money spent for vandalism each year could build several miles of road," he added.

STOCKPILES at INTERSECTIONS



Maintenance and Traffic Services Divisions

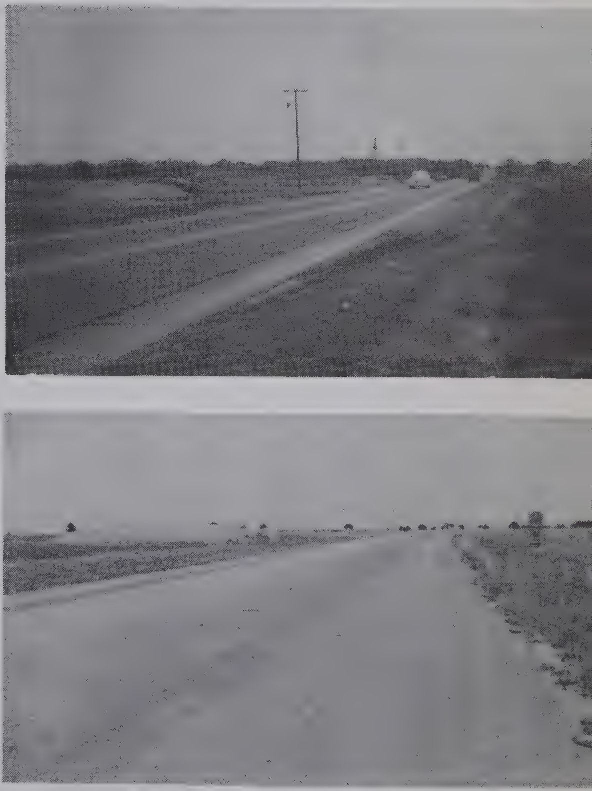
Stockpiling of patching materials in highway rights of way is creating a problem. Some of these stockpiles are becoming sight hazards, and many of them are eyesores.

The problem might be solved by following the same policy as that used against planting shrubs or trees at insections to avoid sight hazards.

It might also be well to consider additional right of way width where the width in logical distribution points is not sufficient to accommodate the large scope of maintenance operations.

The first point to consider in locating a stockpile is its accessibility to the highways to be served, and this is nearly always near an intersection. Good sight distance and drainage would require hilltops or long slopes on hillsides in open country.

Unless some thought is given to this problem, stockpiles may become more and more of a problem from a safety, and also an appearance, standpoint.



Maintenance materials stored on highway right of way.

Safety and appearance should be considered before locating stockpiles at intersections. In some cases sight distance is reduced and in others an eyesore is created.

SLICK WHEN WET!

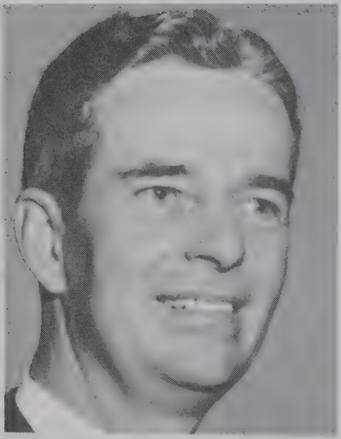
Joe Bruton, Senior Maintenance Foreman
District 8

There is a warning sign in the Manual which we don't like to install, but sometimes have to. On U. S. 80 between Baird and Putnam, we had a dandy good road (36 feet of pavement on modern grades), except that during a period of several years of heavy traffic on a single asphalt surface treatment, bleeding and traffic film caused the surface to become so smooth in many spots that rain produced a slick condition dangerous to high speed traffic.

Then came the signs we don't like - "Slick When Wet" - and here is what we did to get rid of them. In the summer of 1952, we treated Grade 8 crushed stone with kerosene, dropped it on the slick spots and rolled it. The kerosene apparently reduced the softening point of the asphalt to the extent that the crushed stone could be rolled in. Without the kerosene treatment it was not possible to stick the rock. With the kerosene treatment, approximately 80 per cent of the rock remained embedded in the surface, producing the non-skid effect we were trying to obtain without an expensive seal coat.

Treatment of the crushed stone was accomplished by placing a spray bar on the spreader box in such a manner that pressure on a kerosene container caused a spray of kerosene to be directed at the outlet of the spreader box, so that the rock came out of the box thoroughly wet with kerosene. This thin layer of rock was allowed to remain on the pavement a short time, five or ten minutes, and then rolled. About ten gallons of kerosene were used with one cubic yard of rock. On this particular job, three cubic yards of rock per mile were used in eliminating slick surfaces. Since this section of road was treated, no accidents due to slick pavement have been reported, and we have had the satisfaction of removing those signs.

HIGHWAY COMMISSION



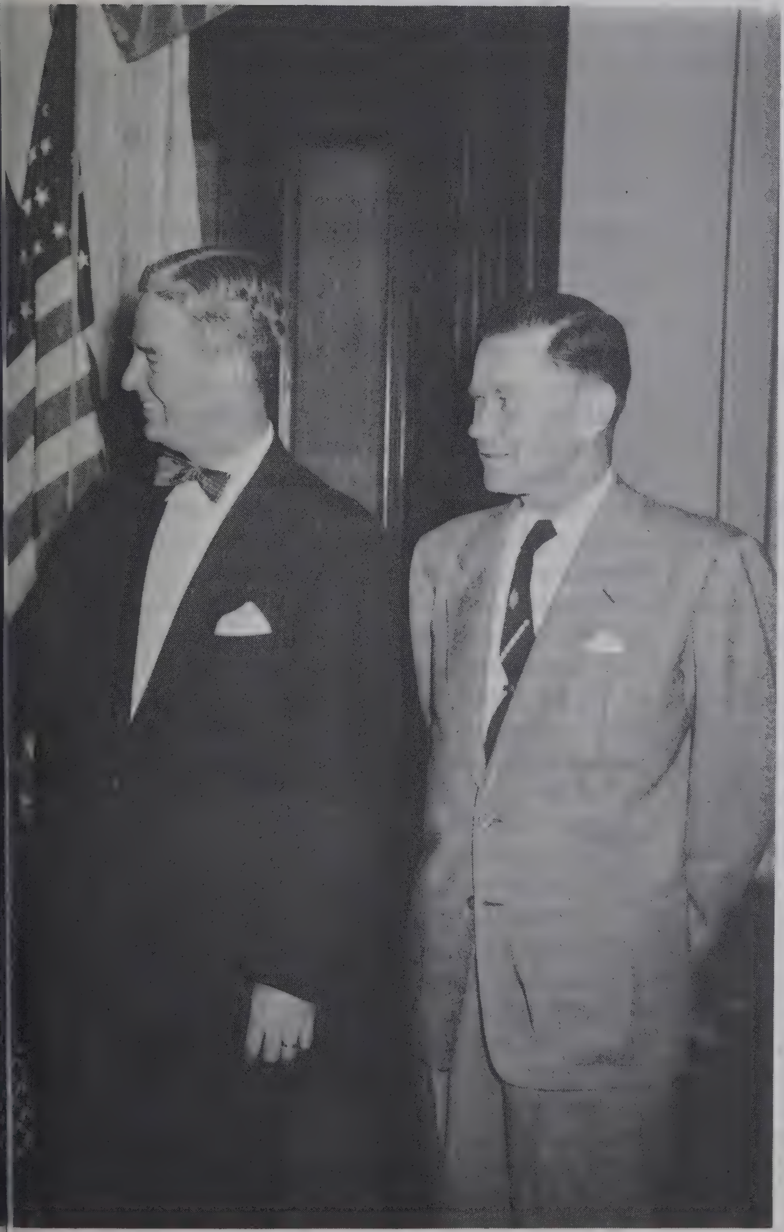
E. H. Thornton Jr.
Chairman

STATE HIGHWAY COMMISSION
E. H. Thornton Jr., Chairman, congratulates newest member Marshall Formby (left). Robt. J. Potts, Commission member, far left, and State Highway Engineer D. C. Greer, right.

Marshall Formby
Member

As of February 15, Marshall Formby of Hereford replaced Fred A. Wemple of Midland, whose six-year term ended, on the State Highway Commission. Center, Formby is sworn in by Judge Meade Griffin as Mrs. Formby and Governor Allan Shivers look on.

At present, Formby practices law in Hereford, and owns radio stations in Hereford and Floydada. A former state senator and county judge, Formby is a graduate of Texas Tech, holds a master of journalism degree from the University of Texas, and studied law at Baylor.



Robt. J. Potts
Member

D. C. Greer
State Highway Engineer

Emulsified Asphalt

B. C. Sides, Resident Engineer
District 6

This is a report on the use of emulsified asphalt (EA-HVMS) mixed with water as a base preservative and prime coat.

TYPICAL SECTION: Thirty-eight foot crown width base, 31-foot prime coat (MC-1), 24-foot two course surface treatment, with a three-foot "Shoulder Preservative Strip" along the edge. (After October 1, we were to apply the first course of the Two Course Surface using MC-3 Asphalt).

FLEXIBLE BASE: Caliche Base average soil, constants as follows: L.L. 32, P.I. 8, L.S. 3.5, soil binder 22 per cent.

TRAFFIC: The 1951 Traffic Count was 1,890 V. P. D. A traffic count was made by Andrews County April 22 and 23, 1952. This count was 3,066 automobiles and 1,491 trucks during the 48-hour period.

PREVIOUS EXPERIENCE: We had completed the asphalt surface on approximately eleven miles of the 16.5 mile project. We had gotten a fairly good job finishing the base, but in many places the base had raveled out after finishing and before the prime was applied. To keep the base from raveling, we had to keep it quite damp. When the MC-1 was applied on the damp base, it would not penetrate as it should and traffic picked up the prime in many places.

We could carry the traffic in the ditch around our construction operations, but found it unadvisable to carry traffic in the ditch at night.

FIELD CHANGE: We proposed using EA-HVMS mixed with water during and after the final finishing operations as a base preservative and prime coat. The estimated quantity of emulsion was based upon using .15 gallon per square yard of base. We were to pay for the emulsion used in the mixture at a unit price per gallon agreed upon with the contractor, and for the water used in the mixture at the unit bid price as sprinkling.

EQUIPMENT: One thousand-gallon water truck equipped with pump for loading the emulsion and water. Two thousand-gallon storage tank for emulsion. Two fifty-five-gallon oil drums for measuring the emulsion.

GENERAL PROCEDURE: We measured the emulsion in 55-gallon oil drums, allowing it to flow by gravity from the storage tank into the drum and then pumping it into the empty water truck. The truck was then filled with water and the mixture circulated for a short time for a more thorough mixing. The emulsion and water mixed readily.

We tried a number of methods of application and percentages of emulsion. We first had in mind to blade mix a small amount of base material with the emulsion mixture and spread it evenly across the surface of the base. This did not work as we wanted it to. The wet roll would not blade well, and we did not have enough material to spread uniformly across the base. This idea might have worked if enough asphalt had been used to stabilize a half inch or more of the top of the base. We did not experiment with this.

We next tried putting down the emulsion mixture in two or three separate courses. We bladed a small roll of fine base material over to the edge of the base and then applied the emulsion mixture across the base. After the emulsion had broken, we bladed the roll of fines across the base, wasting a portion of it across the surface. We then applied another shot of emulsion mixture, rolling it with the pneumatic roller until it started to break. The rolling was to bind the two courses of emulsion together. If we had a sufficient amount of fines left in the roll, we repeated this procedure once more; if not, we sealed the surface with another shot of the emulsion mixture.

As the job progressed, it became more apparent that the quality of the job did not depend so much on the quantity of emulsion used, or the variations in the method of applying it, as it did upon the necessity of applying the mixture uniformly on a tight, hard base. We then began to finish the base completely, including all rolling, before applying the mixture to the finished base. We would go over the base lightly two or three times with the mixture in an effort to eliminate all streaks and thin places. All in all, we get better results using less emulsion and with less trouble, with this last method.

During the entire job, in order to get a more uniform distribution, we put out one load of mixture over a portion of the base then doubled back with the second load, beginning at the point where the first load thinned.

Often streaks would show up after traffic had used the road for a while. We tried to cover these streaks with the mixture, but it would not hold as well as the other places that did not streak.

PERCENTAGE OF EMULSION: We tried, at various times, mixtures ranging from 9 to 30 per cent of emulsion. We seemed to get better results with a mixture containing 10 to 15 per cent emulsion.

WEATHER: We started this work on October 30, and completed it on November 15. During this time we had one rain of about .5 inch and another of about .25 inch. Except for the first three days, the weather was cool and the humidity fairly high.

RESULTS: We had completely finished and primed about two miles of the base when the .5-inch rain came. The water tended to collect in the streaks and minor thin places in the prime. Passing traffic would splash out the water, carrying with it a portion of the fine base material, and leave a slightly larger depression. The cycle was repeated until we had a number of little pot holes. None of them were very large or deep, but we rebladed this portion before shooting the asphalt surface.

We had approximately two and a half miles more finished when the .25-inch rain came. This rain did very little damage to the finished base.

The emulsion picked up under traffic in a few small places. It seemed more susceptible to this if traffic got on the emulsion during the time it was breaking.

COST: I believe the only cost that could be charged to this operation is the cost of the emulsion. We did not use any more water, rolling, or blading than would have been necessary for finishing the base. In fact, we probably saved water in not having to maintain the base behind the finishing operations. We used 13,650 gallons of emulsion on approximately 127,858 square yards of base. This is an average of .107 gallon per square yard. The emulsion cost 20 cents per gallon, the cost per square yard is 2.14 cents.

CONCLUSION: the use of the emulsion mixture has many advantages over the MC-1 prime. Even where it was rained on, it held as well or better than the MC-1 under similar conditions. The principal advantage was that it allowed us to finish and prime in one operation. This resulted in less interference with traffic, and traffic interfered less with the construction operations.

The principal requirement is that the base be covered thoroughly and uniformly. For this reason, I believe it would be better to require a pressure distribution of the mixture.

A pump mounted between the tank and spray bar of the water truck should work much better than gravity flow. A regular asphalt distributor would be the best method of application.

Data Sheet

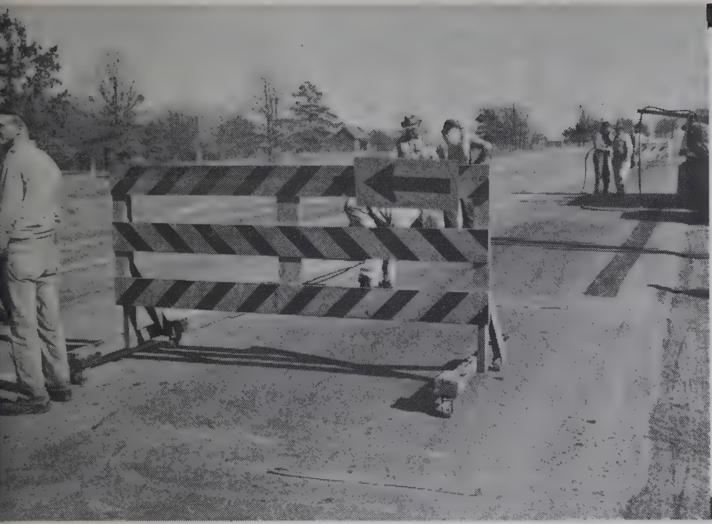
Project S1514(2)
Control 228-5-7
State Highway 51
Andrews County

EA-HVMS AND WATER MIXTURE

Land No.	Sta. to	Sta.	S.Y.	Gals. Emul.	Gals. / S.Y.	Remarks
1	575	596	8,862	1,145	.129	Blade Mix
2	596	621	10,550	1,355	.128	Two Course
3	621	641	8,440	1,250	.148	Three Course
4	641	664	9,706	1,200	.124	Two Course
5	664	685	8,862	1,150	.130	Two Course
6	685	709	10,128	1,280	.126	Two Course
7	709	733	10,128	770	.076	Single Course
8	733	750	7,174	650	.091	Single Course
9	750	771	8,862	783	.088	Single Course
10	771	794	9,706	743	.077	Single Course
11	794	820	10,972	834	.076	Single Course
12	820	841	8,862	1,050	.118	Rebladed
*13	843	860	9,826	900	.092	Single Course
*14	860	870	5,780	540	.093	Single Course
Totals			127,858	13,650	.107	

* These two lands were 52 feet wide

Lands 1 thru 5 received the .5 inch rain
Lands 1 thru 6 were rebladed before shooting asphalt
Lands 6 thru 12 received .25 inch rain
Lands 7 thru 11 were not damaged appreciably by rain



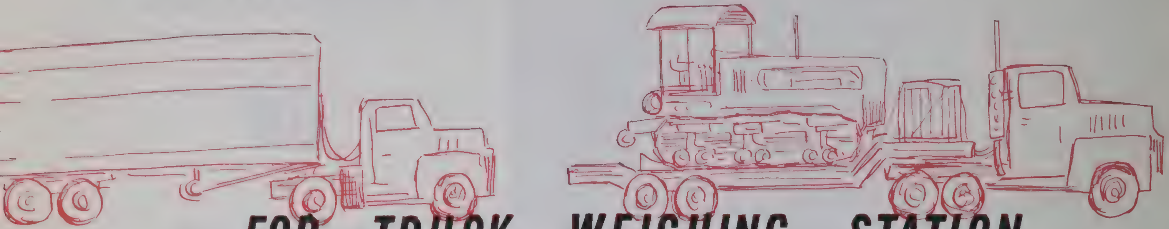
BARRICADES ON CASTERS

Jack Sides, Senior Maintenance Foreman
District 10

For fast moving maintenance operations in one lane of a two-lane road, we have found light barricades mounted on casters to be the most effective way to protect our men and keep traffic moving smoothly. Two of these barricades are used, one at each end of the section under repair. A flagman at each barricade is provided with an 18-inch-square plywood hand sign with a short wooden handle. One side of the hand sign reads "Stop." The other side, "25 M. P. H." Traffic in each direction is alternately stopped and then directed forward through the single open lane at slow speed. As the work progresses, the flagmen roll the barricades forward to keep up with the crew. This keeps the flagmen close enough together to exchange signals easily, and keeps the length of the section between barricades to the minimum necessary for protection of the crew. I believe the suggestion for the barricades came from Richard Schieffer of the Insurance Division.

Attached are pictures of the barricades in use with a crew sealing joints and cracks on U. S. 80 in Van Zandt County. This section of road carries a traffic load of about 4, 500 vehicles per day.

ROADSIDE TURNOUT FOR TRUCK WEIGHING STATION



J. M. York, Assistant District Engineer
District 11

Planning Survey Division recently requested District 11 to construct a roadside turnout to be used as a truck weighing station on U. S. 59 between Nacogdoches and the Angelina River. A site was selected about eight miles south of Nacogdoches where the grade line is relatively flat, the sight distance adequate in both directions, the side ditches carry very little runoff and, as an added attraction, trees along the backslopes provide shade.

U. S. 59 at this point is a 24-foot concrete pavement built in 1945, having a traffic count of 4, 320 vehicles per day. The enclosed sketch shows the dimensions of the turnouts, one on each side of the concrete pavement. The base for the turnouts was constructed of iron ore gravel, the surfacing consisting of a prime and single asphalt surface treatment.

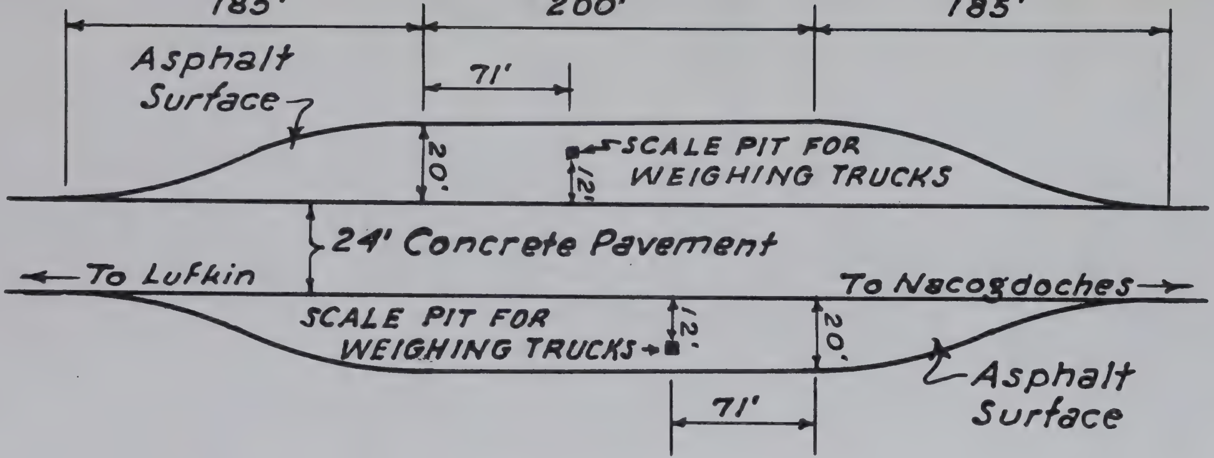
Two concrete scale pits were constructed in accordance with design furnished by the Planning Survey. The tops of the concrete pits were built so that a steel plate can be placed over the pits flush with the surface of the turnouts when not in use. The inside dimensions of the scale pit are approximately 21 by 38 inches.

As this turnout will not be used continuously for weighing trucks, it will be available for use of the traveling public as a stopping point when not being used as a weighing station.

The total cost of the installation is approximately $1, 500.

Scale pit showing half-inch steel plate cover in place.

Looking north at turnout.



TEXAS HIGHWAY DEPARTMENT
DISTRICT NO. 11
Sketch Showing
LAYOUT OF
TRUCK WEIGHING STATION

TEXAS HIGHWAY DEPARTMENT

Childress, Texas
January 19, 1953

REFER TO FILE NO.

MINUTES OF ACCIDENT REVIEW COMMITTEE MEETING

DISTRICT 25

The Accident Review Committee of District 25 met January 19, 1953, at the Highway Department District Headquarters in Childress. Members present were D. R. Doshier, Chairman, R. W. Smoot, C. E. Gresham, L. H. Meinzer, J. R. Long, and Maynet Stiner, Secretary of the Committee.

The Committee analyzed thirteen accidents that were reported since the last meeting of the Committee, on September 6, 1952. All of these were determined to be minor accidents and could have been prevented by the Highway Department employee involved. The supervisor of the operator involved in all accidents will be notified of the Committee's findings.

The Committee will recommend that a letter be written to all supervisory employees giving pertinent information regarding accidents in District 25 and requesting continued cooperation in reporting all accidents involving State equipment.

The Committee discussed the problem of parking in the District Headquarters and Warehouse area. The Committee will recommend painting "no parking zones" where a parked vehicle will extend into the line of traffic or will restrict sight distance. Recommendations for marking parking spaces will also be made in order to utilize the parking area for as many parking places as possible.

Maynet Stiner

Maynet Stiner,
Secretary

TO: FILE D-4

Center Stripe Operations in District 5

J. D. Willson, Senior Maintenance Superintendent
District 5

This year we made some changes in equipment and procedure which greatly increased the quality of our center stripe.

Picture 1 shows the pilot line being placed, a solid yellow paint line made by following a 1,000-foot wire stretched over bottlecap centers with the Kelly-Creswell paint stripe machine. The nozzle of the paint striper was altered with a small piece of copper tubing flattened somewhat on the end.

A 1947 Chevrolet truck from which the rear springs were removed is shown in Picture 2. The rear axle was attached directly to the frame, which was cut and extended to a length which made a 25-foot wheel base. On the rear end of this frame a six hundred gallon Roscoe asphalt maintenance distributor was mounted from which the wheels and axle had been removed. A nozzle suitable for spraying asphalt for a six-inch stripe was mounted just behind the rear axle. On the front of this truck, we installed a boom or "stinger" to enable the driver to follow the pilot line.

Picture 3 shows the striping machine in striping position with a portion of fresh laid asphalt stripe to the rear.

Pictures 4, 5, and 6 show different views of the combination aggregate spreader box and roller.

Picture 7 shows some of the completed stripe.

When all center striping was completed, the Roscoe Asphalt unit was taken off the truck chassis and restored to its normal use in one of the sections.

DRIVE TO RIGHT

DRIVE TO RIGHT

Texas Highway Department
Form 433-B 7-52-40m

70306-752-40m

INTEROFFICE MEMORANDUM

TO: Mr. John A. Waller
Date January 8, 1953

FROM: John B. Nations
Responsible

SUBJECT: Complaints regarding the use of State owned equipment.
Desk D-4

Because you are responsibly concerned with the problems of this Division I felt you would like to know the results of our last year efforts in keeping down complaints about the operation of our State owned equipment and more especially our automobiles. We have had a most amazing year. To my knowledge we have received only one major and six minor complaints regarding this operation. This is about the absolute minimum we could expect when you consider the tremendous number of automobiles, trucks, station wagons, etc. which we operate. There are several good reasons for this, one of which is probably just pure luck. We definitely know that there is a hesitancy on the part of our operators to misuse our equipment which is painted equipment yellow. We also know that the new sign has helped a great deal. Then, too, there has been more extensive use of privately owned vehicles this year which has helped. Another factor which has probably helped is the continuous hammering away at our accident records. As you know, we now make a rather thorough re-investigation of each accident and at that time stress the importance of the correct use of our motor vehicles. The articles in the Construction and Maintenance Bulletin have helped a great deal. However, the one factor which has helped more than any other is the almost complete cooperation on the part of the District personnel. Never before in my experience in the Department has there been such a conscientious effort on the part of the Districts to reduce the misuse of State equipment.

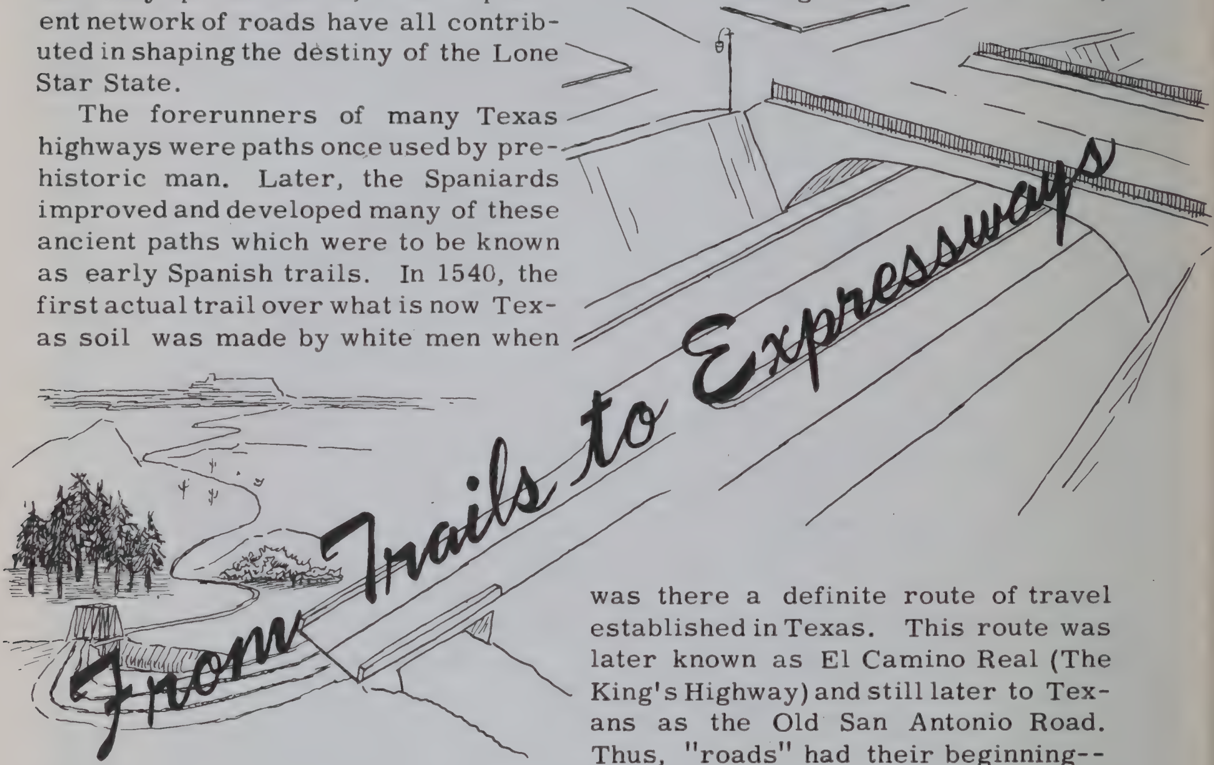
John B. Nations

A STORY OF TEXAS ROADS

Tom H. Taylor, Superintendent, Information Services
Traffic Services

The story of transportation in Texas begins with that of civilization itself. The paths used by ancient man, the early Spanish trails, and the present network of roads have all contributed in shaping the destiny of the Lone Star State.

The forerunners of many Texas highways were paths once used by prehistoric man. Later, the Spaniards improved and developed many of these ancient paths which were to be known as early Spanish trails. In 1540, the first actual trail over what is now Texas soil was made by white men when the Francisco de Coronado expedition marched across Western Texas in search of the Seven Cities of Cibola and Gran Quivera. About two years later, Hernando de Soto and followers entered the state at the northeast corner and pushed into the north central and central sections. Other trails were made during the years to follow, of which the Old Spanish Trail is the most famous. The definite time of origin of this trail is not known. The approximate route of the Old Spanish Trail is now incorporated in U.S. 90, west of San Antonio and continues East over U.S. 290.



Not until 1715, when Saint Denis led an expedition from San Juan Bautista (near present Eagle Pass) through San Antonio to Nacogdoches and eastward, was there a definite route of travel established in Texas. This route was later known as El Camino Real (The King's Highway) and still later to Texans as the Old San Antonio Road. Thus, "roads" had their beginning--evolving from these old Spanish trails into the present highway system.

When the Mexican freighters began taking corn to the Spaniards at San Antonio by oxcart, commerce and highway transportation had their beginning in Texas. Then followed an increase in population when Stephen F. Austin's colonists began entering Texas on horseback and in covered wagons over roads which were liquid mud in rainy weather and iron furrows in dry weather. It was at this time that people began placing "value" on land and present-day real estate was born. "Necessity is the mother of invention." Out of the needs of this pioneer civilization came the oxwagon freighters--often requiring months on the trip between San Antonio and Galveston--and the cart and pony express mail line to Southern California. The overland stage coach began operation where and when roads permitted. The stage was guarded from Indians and pulled through mud by "Big Foot" Wallace, the ranger and Indian fighter, with his party of eighteen armed men. Out of this period came many legendary characters, along with many famous men whose names have become indelible in the annals of Texas History.

Little progress was made in the improvement of roads from the era of the "prairie schooner" to the day of the "horse and buggy." In the sparsely settled country, the people were grateful for even a trail which led home. The things of primary concern were the dangers and discomforts of colonization, the winning of independence from Mexico, and gaining admission into the Union. After gaining a secure position actually and politically, Texas was free to begin positive economic and cultural development and expansion.

Expansion and development were, then as now, essentially dependent on more and better roads. Passable roads the year 'round connecting farms, markets, churches, and schools were an absolute necessity in this growing and prosperous country. A system of taxation for construction and maintenance of roads was put into operation. Roads continued to grow in Texas, but the population and transportation needs grew faster.

At the turn of the century, economic conditions were fairly stabilized and Texas now entered a period of cultural growth that produced the horse and buggy, the rubber-tired family surrey, and finally, the automobile. As the use of these conveyances increased, the need for more and better roads became acute, and in 1911, clubs and other organizations were formed to promote the construction of a system of public roads.

The Thirty-fifth Legislature passed an act on April 4, 1917, creating the State Highway Department. To say that from this beginning the Texas highway system had evolved today into a network of roads encompassing 49,082 miles of highways with some 10,000 employees does not tell the complete story. It is an intricate system, composed of different kinds of highways, constructed according to different specifications, and serving varied purposes, all of which are separately classified. However, there are three general or principal types of highways--urban, farm to market, and trunk highways.

Today practically every Texas citizen lives within a stone's throw of a paved highway. However, history is noted for repeating itself. We find today, as a century ago, that our highway system has grown, but that the population and transportation needs have grown faster. Demands of the 1953 motorists have outgrown the facilities our present highways supply by a country mile. Why has this happened in a prosperous state? The answer is simple. All phases of highway construction and maintenance have been under-financed in recent years. The present highway dollar, faced with the continual spiral of inflation, is worth only 44 cents. It costs twice as much to build and maintain a mile of highway as it did ten years ago.

There are almost 3 1/2 million vehicles registered in this state. This is nearly one vehicle for every two people. Some 81 million miles are driven daily over Texas highways, a distance equal to 162 round trips to the moon. Motor vehicle registrations have practically doubled within the last ten years. The population has increased 20 per cent from 6.4 million in 1940 to the present 7.7 million people. The population of Texas today is 36 times greater than it was a century ago. There are two urban dwellers for each rural inhabitant. Industries are on the march to the Lone Star State. Ideal climate and abundance of raw material together with other favorable factors are fast beckoning factories and individuals alike. Like night follows day, population increase follows industry. The automobile is no longer a luxury but a necessity, and with the anticipated population increase a proportionate increase of motor vehicles can be expected.

D. C. Greer, State Highway Engineer, explains that the highway problem is about the same in every state and is not necessarily limited to Texas. He sums it up by saying that there is nothing wrong with our highway system that money and time will not cure. Much has been done toward solving the problem with the present limited funds available.

Since World War II, the Texas Highway Department has constructed and rebuilt approximately 300 miles of city streets, including some 40 miles of expressways in major cities at a cost of about 45 million dollars. There are over 2, 300 miles of state-maintained streets serving primarily as trunk highway routes. It will be necessary to spend an additional 330 million dollars to eliminate city bottlenecks in many major cities. During the postwar era, emphasis has been placed on expressways and the construction of farm to market roads which have been integrated into the State Highway System. There are presently over 22 thousand miles of these roads, but to meet the minimum rural need, we should have about twice this mileage of FM roads.

The program for constructing city expressways and providing adequate FM roads has been started and remarkable progress has been made during the postwar period. However, the real problem lies in our trunk highways which are the very backbone of our entire transportation system. They have become obsolete and inadequate. Many should be replaced with four-lane divided highways while others should be reconstructed. The truck highways were built in that great highway expansion era of the late '20s

A typical early-day road.

A modern highway designed to meet modern transportation needs. This scene shows a portion of the Houston end of the Gulf Freeway.

and have withstood the elements of time and traffic for many years. The average life of a standard-constructed highway is twenty years. The greater portion of our trunk roads have reached the crossroad of life. Many miles have outlived their life expectancy. Highway engineers have estimated that it will cost slightly over one billion dollars to rehabilitate and modernize our trunk highway system.

E. H. Thornton, Chairman of the Highway Commission, recently expressed the problem in this manner. "Texans today modestly accept the compliment of having the finest system of roads in the country. However, unless adequate funds are made available, they will, in all humility, accept the compliment of having had the best system of highways."

Greer has stated that the people of Texas have an investment of over one billion dollars in their highway system which should be protected by inerrant planning for the future. Texas motorists have long enjoyed the benefits derived from an adequate highway system. However, they are speedily approaching the forks in the roads. One leads to safe, modern highways, while the other route offers unsafe and deficient roads. It will be up to the people to choose wisely the route of their preference.

History shows that Texans, in the past, have risen to meet and solve their highway transportation problems, and our past speaks well for the future.

CONSTRUCTION INSPECTION SCHOOL

District 4

Richard C. Crandall, Chief Inspector
District 4

A District Inspector's School was held in District 4 at the request of James G. Lott, District Engineer. This school covered all subjects taught at the recent series of Instructors' Schools held by the Construction Division in Austin. The men who attended the Austin classes acted as instructors.

Charles W. Smith, Assistant District Engineer, supervised the organization of the classes and arranged the following schedule:

February 9 and 10 - "Hot Asphaltic Concrete"
Instructors: Richard C. Crandall, Chief Inspector
Louis A. Wherman Jr., Senior Inspector

February 11 - "Surface Treatments and Cold Bituminous Mixtures" and "Concrete Pavement"
Instructors: George J. Cannon, Associate Resident Engineer
Lewis H. White, Designing Engineer

February 12 - "Earthwork and Flexible Bases"
Instructors: George J. Cannon, Associate Resident Engineer
Lewis H. White, Designing Engineer

February 13 - "Small Structures"
Instructors: R. G. Schlinkman, Designing Engineer
Henry L. Gallegly, Senior Party Chief

Total attending 59 - Daily Average: 36.

A great amount of interest was displayed by both the students and the instructors. Many of the troublesome inspection problems and their solutions were discussed. The attending resident engineers aided the instructors by contributing their experiences to the various discussions.

It is certain that the result of this school will be a much more intelligent and uniform construction inspection procedure in District 4.

Front row: L. V. Hollar, Sr. Inspector, Pampa; J. R. Owens Jr., Rodman, Amarillo; L. A. Wehrman Jr., Sr. Inspector, Amarillo; C. B. Hudson, Sr. Party Chief, Hereford; G. J. Cannon, Assoc. Resident Engineer, Amarillo; L. H. White, Designing Engineer, Borger.

Second row: W. D. Brooks, Sr. Inspector, Amarillo; C. E. Neil, Sr. Inspector, Amarillo; Bill B. Cain, Instrumentman, Amarillo; R. T. Lowndes, Jr. Inspector, Amarillo; F. E. Melear, Sr. Inspector, Amarillo; E. N. Stewart, Jr. Inspector, Amarillo; F. J. Cox Jr., Jr. Inspector, Amarillo; E. L. Russell, Sr. Inspector, McLean.

Third row: L. O. Dewees, Checker, Vega; T. E. Brisendine Jr., Sr. Inspector, Hereford; R. S. Morgan, Jr. Inspector, Hereford; Arden Beghtel, Jr. Inspector, Canadian; J. A. Ullom, Sr. Party Chief, Canadian; Calvin Merchant, Sr. Instrumentman, Hereford; L. J. Clark, Jr. Inspector, Hereford; Billy E. Brown, Rodman, Pampa.

Fourth row: E. D. Burk, Jr. Inspector, Borger; J. P. Wright, Checker, Pampa; A. J. Siddens, Jr. Inspector, Canadian; T. J. Loftin, Jr. Inspector, Borger; M. L. Newton, Chief Inspector, Pampa; D. W. Stafford, Rodman, McLean.

Back row: J. V. Light, Sr. Party Chief, Amarillo; W. D. McKendree, Sr. Party Chief, Pampa; D. H. Rose, Office Engineer, Amarillo; R. C. Crandall, Chief Inspector, Amarillo; R. G. Cunningham, Engineering Assistant, Amarillo; J. P. Farrar, Instrumentman, Pampa; George W. D. Jones, Chief Inspector, Pampa; G. W. McLain, Sr. Inspector, Canadian.

Students attending the school, but not in the picture were:
Ebert Ashby, Jr. Inspector, Dalhart; J. G. Baird, Chief Inspector, Pampa; C. W. Beck, Jr. Inspector, Spearman; S. E. Bissantz, Sr. Inspector, Borger; L. B. Carter, Sr. Party Chief, Borger; J. G. Dewald, Sr. Resident Engineer, Amarillo; J. J. DeShazo Jr., Sr. Party Chief, Amarillo; H. L. Gallegly, Sr. Party Chief, Dalhart; A. L. Gray, Jr. Inspector, Dalhart; J. L. Hawley Jr., Sr. Party Chief, Borger; J. H. Jackson, Sr. Inspector, McLean; K. W. Kerbow, Sr. Party Chief, Amarillo; E. E. Kirkwood, Jr. Inspector, Amarillo; A. L. Ledbetter, Sr. Party Chief, Amarillo; L. R. Loyd, Sr. Party Chief, Spearman; Ray Martin, Rodman, Spearman; B. H. Murphy, Jr. Inspector, Dalhart; L. W. Potter, Sr. Inspector, Dalhart; Byron Reese, Sr. Resident Engineer, Amarillo; R. G. Schlinkman, Designing Engineer, Amarillo; C. W. Smith, Ass't. District Engineer, Amarillo; M. R. Tidrick, Sr. Inspector, Pampa; W. V. York, Sr. Resident Engineer, Amarillo.

"Comments From the Traveling Public"
OVER THE HIGHWAYS

I took a trip, some thirty years overdue, to Arizona during the holidays. We crossed the State of Texas east to west and northwest coming back. Having been an old highway man from Wisconsin in years back and having been in Texas in the army in 1917, I could not but be moved to note the progress and write my praise to you and those who preceded you. One sees years of planning, dreaming, fighting for funds, and execution of the dreams.

One notes a high degree of diligence of employees from top to bottom. The little things seemed not overlooked. From many others who have visited your state and no doubt have not written you, I have heard words of praise. May this recognition be not tardy.

James A. Donnelly
Rantoul, Illinois

. . . We want to compliment you on your highway parks affording travelers a nice place to stop for rest and eat. In traveling 3, 500 miles we found your state the most progressive state along the lines mentioned above. Not even our state comes up to you . . .

Binghamton, New York

. . . If any of your rangers have a regulation hat size 7 1/4 that has been worn I would like to buy one . . .

Elmer D. Mattox
Durham, North Carolina

. . . You need a white line for center marker instead of black . . .

Durham, North Carolina

LOST, ONE SUITCASE - -

. . . On December 30, 1952, I was traveling north on Highway 81 through Austin and Waco, taking 77 into Dallas and 75 out of Dallas. Somewhere along the route the trunk of my car came open and a white leather suitcase was lost. The bag bore the name tag Barbara Owen, Senior Hall, Stephens College, Columbia, Missouri..

Mr. and Mrs. Frank Carter
402 Conley Avenue
Columbia, Missouri

Note: Anyone hearing or knowing anything about this, contact above.

MORE COMMENTS ON SIGNING AND MARKING . . .

. . . No signs indicating distances to service stations over long desert areas. . .

Madison, Wisconsin

. . . Curves not posted for rate of speed to be used. . .

Moline, Illinois

. . . Confusing road signs in ---. Went around same square twice before figuring road out. . .

Detroit, Michigan

. . . Direction signs at road forks not always placed safe distance from road fork. . .

Chicago, Illinois

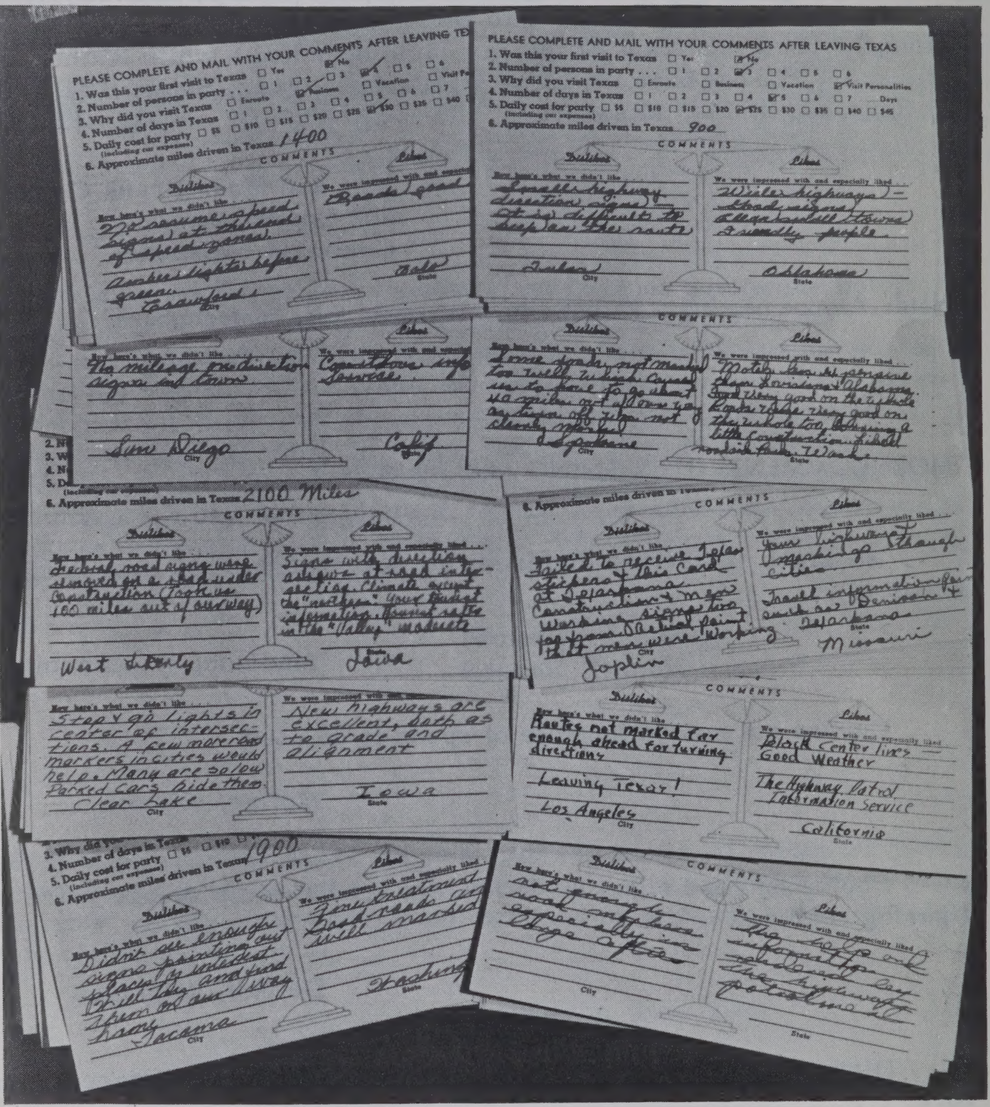
. . . Curbs and traffic lanes not adequately marked in some cities. . .

Seattle, Washington

. . . Lack of signs between towns and cities showing mileage. . .

San Diego, California

PROGRESS IN REVERSE . . .



PLEASE COMPLETE AND MAIL WITH YOUR COMMENTS AFTER LEAVING TEXAS
1. Was this your first visit to Texas ☐ Yes ☑ No
2. Number of persons in party . . . ☐ 1 ☐ 2 ☑ 3 ☐ 4 ☐ 5 ☐ 6
3. Why did you visit Texas ☐ Enroute ☐ Business ☐ Vacation ☑ Visit Personalities
4. Number of days in Texas ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☑ 5 ☐ 6 ☐ 7 ...... Days
5. Daily cost for party (including car expenses) ☐ $5 ☐ $10 ☐ $15 ☐ $20 ☑ $25 ☐ $30 ☐ $35 ☐ $40 ☐ $45
6. Approximate miles driven in Texas 900

COMMENTS

Dislikes — Now here's what we didn't like . . . Smaller highway direction signs (It is difficult to keep on the route)

Likes — We were impressed with and especially liked . . . Wider highways — Good signs — [illegible] towns — Friendly people.

Tulsa (City) Oklahoma (State)

6. Approximate miles driven in Texas 1400

Now here's what we didn't like . . . No resume speed signs at the end of speed zones. Amber lights before green.

We were impressed with and especially liked . . . Roads good

Crawford (City) Colo (State)

Now here's what we didn't like . . . No mileage or direction signs out of town

We were impressed with and especially liked . . . Courthouse info service.

San Diego (City) Calif (State)

Now here's what we didn't like . . . Some roads not marked too well [illegible]

We were impressed with and especially liked . . . [illegible]

Spokane (City) Wash (State)

6. Approximate miles driven in Texas 2100 Miles

Now here's what we didn't like . . . Federal road signs were removed on a stretch under construction (took us 100 miles out of our way)

We were impressed with and especially liked . . . Signs with direction arrows at road intersections. Climate except the "northers." Your Budget information. [illegible] in the "Valley" [illegible]

West Liberty (City) Iowa (State)

Now here's what we didn't like . . . Failed to receive Texas stickers & this card at Texarkana. Construction & men working signs [illegible] that men were working

We were impressed with and especially liked . . . Your highway markings through cities. Travel information [illegible] such as Denison & Texarkana.

Joplin (City) Missouri (State)

Now here's what we didn't like . . . Stop & go lights in center of intersections. A few more road markers in cities would help. Many are so low parked cars hide them.

We were impressed with and especially liked . . . New highways are excellent, both as to grade and alignment

Clear Lake (City) Iowa (State)

Now here's what we didn't like . . . Routes not marked far enough ahead for turning directions. Leaving Texas!

We were impressed with and especially liked . . . Black center lines — Good Weather. The Highway Patrol Information Service

Los Angeles (City) California (State)

6. Approximate miles driven in Texas 1900

Now here's what we didn't like . . . Didn't see enough signs pointing out places of interest. Will try and find them on our way home.

We were impressed with and especially liked . . . Fine treatment Good roads and well marked

Tacoma (City) Washing[illegible] (State)

Now here's what we didn't like . . . [illegible]

We were impressed with and especially liked . . . [illegible]

There were 117 survey cards received from tourists criticizing our highway signing and markings in February. This is 46 per cent more complaints than were received in January.